MANUAL FOR IMPLEMENTATION OF MDT

Damien Foundation India Trust
MADRAS 600 031. INDIA

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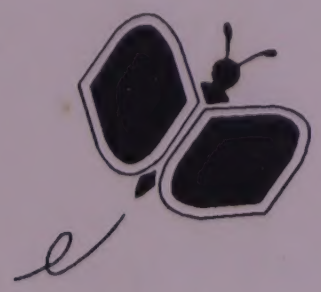

J.o
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MANUAL FOR IMPLEMENTATION OF MDT

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PREFACE

The Damien Foundation India Trust (DF) is associated with National Leprosy Eradication Programme of India since its inception. Along with the Government of India, it signs a Scheme of Participation every five years. Recently it has been renewed again for another five years from 1993.

The projects of Damien Foundation India Trust (DF) extends from Bihar to Trivandrum. More and more MDT Districts are being undertaken by Damien Foundation India Trust (DF) as any other ILEP members. Several centres almost with the size of control units are also being run by Damien Foundation India Trust (DF).

In order to have uniform criteria for field management of leprosy and for effective recording, reporting system, and also for monitoring and evaluation, a guideline is provided by Damien Foundation India Trust (DF) in line with the policy of NLEP. I am grateful to Dr. V. Kandaswami, Senior Consultant, Damien Foundation India Trust, Dr. Krishnamurthy, Assistant Director of Epidemiology, CLTRI, Chengalpet and Dr. Vijayakumar, Epidemiologist, Karigiri for their expert contributions in compiling the material.

My sincere thanks to Dr. C. Vellut, Mr. P. Antony and Mr. Vedadri for their valuable comments. I hope this manual will serve its purpose for our projects.

Dr. N.B.B. REDDY
Secretary
Damien Foundation India Trust

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MANUAL FOR IMPLEMENTATION OF MDT

1.0.0 INTRODUCTION

Leprosy is one of the most significant public health problems in India. A national programme to control the disease has been implemented for more than three decades. A vast amount of data on various activities and outcome has been collected over these years. However, these data suffer from non comparability because of varying knowledge and concepts on the disease prevalent among workers and non-uniformity of data collection, processing and reporting.

It is therefore, imperative to have standardised basic operational concepts and criteria mostly in line with Government of India guidelines on various aspects of leprosy and reporting formats which may help in establishing uniform system of data collection processing and transmission to monitor the programme of the projects under DF.

2.0.0 CLINICAL DIAGNOSIS

Leprosy is a chronic granulomatous infectious disease caused by Mycobacterium leprae primarily affecting the peripheral nerves and skin and occasionally certain other tissues like eyes, mucosa of the upper respiratory tract, muscles, bones reticuloendothelial system and testes. Brain and spinal cord are not affected.

2.1.0 COMMON MANIFESTATIONS

2.1.1 Skin Manifestation:

Leprosy manifests in the skin which is one of the chief organs of involvement in leprosy in the following ways :

1. *Patch:* Patch is a circumscribed area with change in colour. It can be flat or raised or combination of both.
   - i) Macule
   - ii) Plaque

   i) *Macule:* A Macule is an area of the skin characterised by change in the colour. It is neither raised nor depressed.

   ii) *Plaque:* A Plaque is a circumscribed area of the skin which is either elevated or depressed below the surface.

2. *Papule:* A Papule is a small solid palpable elevation less than 0.5 cm in diameter. In Leprosy, early lesions may present as a single papule or multiple papules.

3. *Nodule:* A Nodule is a solid elevation, larger than 0.5 cm in diameter.

4. *Vesicle:* A Vesicle is a small raised lesion containing clear fluid.

5. *Bulla:* Bullae also contain clear fluid, but are larger in size.

6. *Pustule:* A Pustule is a superficial collection of pus. It may occur de novo or secondary to vesicles or bullae.

7. *Infiltration:* Infiltration is an area of the skin which is thick, shiny and erythematous. All three characterised must be in the same area.

8. *Atrophy:* Characterised by loss of normal skin texture. Fine wrinkling may be seen. It is often seen in resolved lesions of leprosy.

9. *Ulcer:* Discontinuity of the skin or mucous membrane.

10. *Fissure:* Discontinuity of the epidermis only.

2.1.2 Nerve Manifestations:

Involvement of nerves in leprosy could lead to nerve thickening or abscess and or nerve dysfunction.

A. Nerve thickening may be uniform or irregular.

B. Nerve Tenderness

C. Nerve Abscess

Peripheral nerves are cord-like structures. Granuloma due to leprosy leads to either uniform thickening of the nerve or localised swelling (nodule). Sometimes there may be destruction (necrosis) of the swollen nerve leading to an abscess. It may not be possible to elicit fluctuation in nerve abscess. The nerve abscess may burst open through the skin forming a sinus.

D. Loss of function :

Nerve consists of a bundle of filaments which carry signals of three basic functions.

1. Sensory - Pain, touch and temperature mainly.
2. Motor - Carry signals to control voluntary muscles.
3. Autonomic - carry signals to control sweat secretion and cutaneous blood vessels.

The granulomatous changes in the nerves lead to loss of function of varying degree which during the early stages may not be evident. As a result the following changes may be seen:

1. Loss of sensation over the area of skin supplied by the affected nerve.
2. Paralysis and or wasting of voluntary muscles supplied by the affected nerve.
3. Loss of sweating over the skin supplied by the nerve.

2.1.3 Manifestations in Eye:

1. Corneal anaesthesia - due to involvement of the Trigeminal nerve.
2. Lagophthalmos - due to involvement of facial nerve; It may lead to exposure keratitis - Corneal opacity.
3. Iridocyclitis - which if untreated may lead to synechiae formation, (adhesion) glaucoma & eventually to blindness.

Common Presenting Symptoms

1. Pain in eye
2. Irritation & watering
3. Red eye

4. Photophobia
5. Inability to close the eye.
6. Poor vision.

2.1.4 Other Manifestations

1. Loss of eyebrows (Madarosis)
2. Collapse of bridge of the nose
3. Gynaecothelia and Gynaecomastia
4. Internal organs like bones, liver, kidney testes etc. may also be affected.

2.2.0 CARDINAL SIGNS IN LEPROSY :

1. Demonstration of Mycobacterium leprae from a lesion.
2. Enlargement and /or tenderness of the nerves.
3. Anaesthesia over a skin lesion or in the area supplied by the nerve.

To diagnose Leprosy at least one or more of these signs should be present.

Definite Leprosy :

When any one or more of these signs are present, diagnosis of leprosy is considered to be definite.

Suspected Leprosy:

a. Patient presenting with patch with no sensory loss and bacteriological negativity.

b. Area of aneathesia without nerve thickening and without skin lesion.

These should be considered '' suspects'' and monitored closely for one year. If a clinical and bacteriological review at this time shows that there is Status Quo in the lesion or the lesion has resolved, the person can be deleted from the suspect register. The patient should be diagnosed as having leprosy only if any of the cardinal signs are elicited.

2.3.0 DEFINITION OF A CASE OF LEPROSY

'' A Patient with cardinal signs requiring therapy with antileprosy drugs''.

2.4.0 CLINICAL AND BACTERIOLOGICAL EXAMINATION

2.4.1 Clinical Examination

i) *History* - Present complaint

Present illness & treatment

Family history

Past history

ii) *General Examination:*
All systems need to be examined to detect concurrent illness like Tuberculosis, anaemia, jaundice, etc. that may have a bearing on management of the disease.

iii) *Physical examination:*

a) Examine the patient as a whole, in a systematic manner.

b) An unbiased approach-there are several diseases with skin lesions and several diseases with deformities simulating leprosy. Look for the cardinal signs to confirm the diagnosis of leprosy.

c) Get the consent of the patient before you start examining.

d) Assure adequate privacy.

e) Good natural light is necessary to look into the changes in the skin colour. Look at the skin from an angle.

f) Examine from head to toe irrespective of the patient's complaint, as the patient may not be aware of other lesions in areas like the nape of the neck or the back.

g) Compare both sides of the body.

h) Listen actively and observe carefully - even as the patient enters the room, look for abnormal gait, toxicity etc.

i) Do a complete examination of all systems.

iv) *Examination of skin*
The patient should be examined in broad daylight from head to foot. When cultural situations demand, women examiners may be required. The following details are to be noted when skin lesion(s) are observed.

1. Number of lesions
2. Site
3. Distribution - Symmetrical/Asymmetrical
4. Size
5. Shape-Annular, Punched out
6. Colour - Hypo/Erythematous
7. Surface - Dry/Scaly/Shiny/Smooth
8. Margins - ill defined/well defined
9. Flat or raised
10. Infiltration
11. Nodules
12. Tenderness / elicited by tapping

13. Hair loss
14. Sweat loss
15. Sensation - Touch
    Pain
    Thermal

v) *Sensory Examination*

1. Patient should be briefed well about the testing procedure.
2. Testing for sensory loss should be carried out
   (a) On all skin lesions the Appearance of which is compatible with those of leprosy.
   (b) When a patient complains of numbness and
   (c) When there is a nerve trunk thickening even in the absence of any skin lesion.
3. The procedure should be demonstrated to the patient
4. Carry out the test with the patient's eye closed. Proceed from normal skin to the affected part and compare. Then compare with the normal skin on the opposite side corresponding to the affected area.

<u>TOUCH</u>

a) Tools: Nylon monofilament/feather/cotton. While using feather/wisp of cotton wool, instead of light touch, use gentle stroke within the lesion.

b) Response to look for: The patient should show with his finger the spot that is being touched or ask the patient to count the number of the strokes. This test may be repeated before confirming loss of touch sensation.

<u>PAIN</u>

a) Tool - Sharp Pin

b) The part to be tested is touched with the point of the pin perpendicularly. The threshold pressure required to elicit adequate response is determined first in the normal skin.

c) Response to look for: The patient should say whether he feels pain or not. In children one can also look for withdrawal response or expression on the face indicative of pain.

<u>THERMAL</u>

a) Tools: Two test tubes of cold and hot water respectively/battery operated thermal testing equipment.

b) The two test tube should be used alternatively on the affected part.

c) Response : The patient should say whether the test tube is hot or cold.

vi) *Nerve Examination*

Body Chart (nerves) & sensory mapping. (See Page 38)

Nerves of Prediliction which should always be palpated include the ulnars in the groove above the medial humeral epicondyle, the radial at the postero-lateral aspect of mid arm, the superficial radial & median at wrist, lateral Popliteal Nerve at the neck of fibula.

a) All peripheral nerve trunks and commonly affected cutaneous nerves are to be examined.

b) Cutaneous nerves in the vicinity of the skin lesion are also to be examined.

c) The nerve should be palpated gently with the pulp of the finger across the long axis of the nerve over the full length of the palpable course of the nerve.

d) Compare with the corresponding nerve on the opposite side.

What to look for

- Thickening of the nerve - uniform/irregular
- Tenderness
- Consistency : soft/firm/hard

Nerve Function

a) Sensory - Look for loss of sensation in the cutaneous areas of distribution by corresponding nerves.

b) Motor functions: VMT (Voluntary Muscle Testing)

One muscle at least is tested for each nerve to assess motor function. The muscle is graded according to strength.

1. Normal = performs the movement as a normal person of the same age and sex.
2. Weak = reduced movement of the muscle.
3. Paralysed = No movement of the muscle.

Nerve	Paralysis	Sensory Loss	Test to Detect Muscle Weakness
Ulnar Nerve	Clawing of ring and little fingers	Little finger & ulnar side of ring finger	abduction of little finger against resistance
Median Nerve	Clawing of index and long fingers and thumb	three and half fingers on the radial side	Opposition of thumb against resistance
Radial Nerve	Wrist drop	Small area on lateral aspect of dorsum of hand (see Annexure)	Extension of wrist against resistance
Lateral Popliteal Nerve	Foot drop	Dorsum of foot	Dorsiflexion of foot against resistance
Posterior TibialNerve	Claw toes	Loss of sensation on sole of foot	—
Facial Nerve	Lagophthalmos	—	Closure of the eyelids
TrigeminalNerve	—	Corneal Anaesthesia	Blink reflex

vii) All the clinical findings including identification characteristics should be recorded (See Notations-Annexure 1 and Patient Card-Annexure 2)

2.5.0 BACTERIOLOGICAL EXAMINATION

1. For diagnosis in doubtful cases.
2. To classify Leprosy.
3. At the beginning of the treatment.
4. Once a year for the MB Cases for follow up.
5. To suspect resistance
6. To identify relapse.
    1. Procedure: refer skin smear manual
    2. Smear should be taken from at least three sites.
        i) One of the earlobes
        ii) If more than one skin lesion, smear to be taken from two skin lesions from the margin or from the active site of the lesion.
        iii) In single lesion cases smear to be taken from the margin or from the active site of the lesion.

2.6.0 DIFFERENTIAL DIAGNOSIS

Macule	Plaque	Diffuse	Nodular	Polyneuritic	Ulcer
Early Vitiligo (leucoderma)	Tinea Circinata	Myxoedema	Neurofibroma	Poliomyelitis	Diabetes
	Scar		Leishmaniasis	Cervical rib	Spinal cord injuries
Tinea Versicolar	Psoriasis		Secondary syphilis	Injury to spinal cord	
Birth mark	Lupus Vulgaris			Congenital indifference to pain	
Pityriasis Alba	Secondary syphilis				
Scar	Leishmaniasis				
Leishmaniasis					
Secondary syphilis					

All these conditions may mimic leprosy lesions but the diagnosis can be easily established by referring to relevant history & demonstrating the absence of cardinal signs.

2.7.0.1 CLASSIFICATION

Observation test skin	Indeterminate	TT	BT	BB	BL	LL	Pn
i. Number	Usually Single	Usually single	multiple	multiple	multiple	multiple	—
ii. Distribution	localised	localised	asymmetrical	asymmetrical	Tendency for symmetry	symmetrical	—
iii. Morphology a. Type of the lesion	macule	macule or plaque	macule or plaque	macule or plaque	macule or plaque	macules, papules plaques, diffuse infiltration nodules	—
b. margin	ill-defined	well-defined and less ill-defined	more well defined	well/ill defined	more ill defined and less well-defined	ill-defined	—
c. Satellite	—		may be present	—	—	—	—
d. central healing	—	may be there the area will be anaesthetic	may be there the area will be anaesthetic	may be there not anaesthetic	may be there not anaesthetic	—	—
iv. Anaesthesia over the skin	+ or -	+ + +	+ +	+	+ or -	—	the skin supplied by the nerve
i) Glove and stocking anaesthesia	—	—	—	—	may be +	+	—
v. Nerve enlargement	—	+ or -	++	+	+	only at later stage	++++
vi. Smear	Negative	Negative	+ or-ve	+	++	+++	-ve
vii. Reaction							
a. ENL	—	—	—	—	+	++	—
b. Type 1	—	—	++	+	+	—	+

II. GROUPING

For therapeutic purposes the various types of leprosy are grouped under two categories. Multibacillary (MB) and Paucibacillary (PB).

MB	PB
BB	T
BL	TT
LL	BT
PN	Pn

1. *Criteria for inclusion of cases under MB regimen of MDT*
   a) BB, BL, LL
   b) All smear positive cases irrespective of type of clinical diagnosis.
   c) PN cases with more than one trunk nerve involvement.
   d) All relapses irrespective of previous classification.
   e) BT cases with more than 3 lesions.
2. *Criteria for inclusion of cases under PB.*
   a) I, TT, BT cases (upto 3 lesions bacterilogically negative) Pn (single nerve) trunk

2.8.0 MANAGEMENT

2.8.1 Aims of MDT

1. To render leprosy patients non infectious in the shortest time, thus breaking the chain of transmission.
2. To reduce the duration of therapy.
3. To arrest the progression of the disease at an early stage.

2.8.2 Treatment Regimen

Group	Age in years				Duration
	0-5	6-9	10-14	Greater than 14	
MB					
Rif.	-	300 mg	450 mg	600 mg	24 pulsed doses in 36 months.
Clo.	-	100 mg & 50 mg (twice a wk)	150 mg & 50 mg (A D)	300 mg & 50 mg (O D)	
		25 mg (O D)	50 mg (O D)	100 mg (O D)	
PB					
Rif.	-	300 mg	450 mg	600 mg	6 pulsed doses in 9 months
Dap.	-	25 mg(O D)	50 mg (O D)	100 mg (O D)	

2.8.3 Precautions to be taken while starting the treatment

1. When the patient is having concurrent tuberculosis, Rifampicin is given daily.
2. During the first trimester of pregnancy, MDT is to be started at the end of the trimester.
3. When the patient is having jaundice, or nephritis the treatment is to be withheld until it clears.

2.8.4 SIDE EFFECTS OF COMMONLY USED ANTILEPROSY DRUGS

Drugs & common side effects	Manifestations	Management
1. <u>Dapsone</u>		
Anaemia	Commonly seen in G6 PD deficiency Pallor, General Weakness, breathlessness	Supportive therapy-haematinics, investigate and treat worm infestations.
Hepatitis	Nausea, vomiting (mild), yellow colour urine, yellow colour conjunctiva of jaundice if haemolysis occurs	stop antileprosy drugs; hospitalisation
Nephritis	Oliguria, morning oedema of face and feet	stop antileprosy drugs, supportive treatment and hospitalisation.
Agranulocytosis	Fever, ulcers in buccal mucosa	stop DDS; supportive therapy; Hospitalisation, Restart
Fixed drug eruption	Itching, localised skin rash and/or hyperpigmentation	stop DDS
Exfoliative-Dermatitis	Severe itching, skin rash, extensive severe scaling and exfolliation, ulcers over buccal mucosa. May be associated with Jaundice with renal impairments	stop DDS/Hospitalisation Never administer Sulfa group of drugs
Dapsone poisoning	Bluish discolouration of mucosa and nail bed. General weakness, breathlessness, Delirium, loss of consciousness - coma	Hospitalisation. stomach wash. 1% Methylene blue solution (1gm in 100 ml. of saline) (Oral and intravenous). High doses of vit. c (I.V). Supportive therapy like nasal oxygen, I.V fluids, monitor consciousness and renal function
2. <u>Rifampicin</u>	Reddish discolouration of urine, saliva and sweat. Nausea, vomiting, yellow colour urine, yellow colour conjunctiva	Reassure the patient Stop antileprosy drugs, Hospitalisation
Blood dyscrasia Flu syndrome	Thrombocytopenic purpuric spots, Fever, malaise, severe body pain, Arthralgia	Stop rifampicin Stop rifampicin-analgesics Try rifampicin again and if symptoms recur, stop rifampicin administration.
Renal damage Hypersensitivity	Albuminuria, reduced urine out put. Skin rash	Stop rifampicin Stop rifampicin. Never restart.
3. <u>Clofazimine</u>		
Discolouration	Brownish discolouration is seen in skin, urine and body fluids including breast milk	Reassure the patient.
Icthyosis	Itching and dryness of skin and scaling. Conjuctival dryness and irritation.	Apply oil to the skin. Moisturising eye drops Reassure the patient.
Gastro intestinal Disturbance	Pain in the abdomen, (Overdosage) nausea, vomiting, diarrhoea	Reassurance. Symptomatic treatment
4. <u>Ethionamide/ Prothionamide</u> (225 mg daily for adults) by whichever drug it replaces.	Hepatic disfunction and jaundice	Stop ethionamide, supportive therapy, Hospitalisation.
Hepatitis		

NOTE: Dapsone syndrome is not uncommon. It is characterised by fever, malaise, joint pain followed by severe itching all over the body. This may be associated with or followed by skin rash, exfolliation, jaundice and sometimes renal impairment. The symptoms usually commence during sixth week after initiating dapsone therapy. The condition may be fatal and hence it should be identified early.

2.9.0 Health Education

When a person is diagnosed as a case of leprosy, the Health Worker has to encourage him to take regular and complete treatment. When he is regular, the health worker should congratulate him. If the patient is irregular the health worker must be able to find reasons for his absence and must be able to correct them by strengthening the positive factors acting on him and reduce the strength of the negative factors. Health worker's rapport with the patient, his family and the community will help the patient to be regular.

3.0.0 LEPRA REACTIONS:

3.1.0 Reactions are immunologically mediated acute inflammatory episodes occurring during the course of the disease. They are of two types - Type I and II, the former occurring in BT, BB & BL cases while the latter in BL & LL cases. Some points by which one can differentiate these two types are given in the following table.

Diff. Point	Type I	Type II
Type of leprosy	BT,BB,BL	BL,LL
Prodromal symptoms & signs	Nil/Mild	Common & often severe fever, malaise, myalgia
Manifestation	Exacerbation of lesions which become erythematous, raised oedematous, painful. (new oedematous succulent lesions may occur). May be painless (silent)	crops of erythematous painful SC nodules. Few to many, subsides in a few days followed by fresh crops
Duration	Few weeks to months	Last few days, successive crops may occur over months/years
Nerve involvement	Frequent & often severe	Less frequent
Systemic manifestation	Nil	Arthritis, nephritis, lymphadenopathy.
Cause	Cell mediated immune response	Immune complex reaction

3.2.0 Risk Factors

1. Multiple lesions (Skin)
2. Lesions on face (Skin)
3. Skin lesion in the vicinity of nerve trunk
4. Pregnancy, child birth & Lactation
5. Nerve thickening and tenderness.

Patients with these risk factors should be monitored for occurrence of reaction atleast once in 3 months.

3.3.0 Precipitating Factors

a) Intercurrent infection - Malaria, filariasis, amoebiasis, tuberculosis, helminthiasis, urinary sepsis.

b) Stress - Pregnancy, childbirth, lactation, trauma, vaccination.

3.4.0 Management of Reactions

Reactions should be managed under the cover of antileprosy chemotherapy.

3.4.1 Drugs commonly used in the management of reaction

1. Steroids
2. Clofazimine
3. Thalidomide
4. Chloroquine
5. Analgesics (Aspirin, Paracetamol etc.)

3.4.1.1 In mild reactions one can use analgesics and chloroquine. Chloroquine is given in a dose of 1 tablet thrice a day and thus gradually tapered and stopped (1 tab. = 150 mg base)

Look for: Nausea & vomiting
Optic neuritis (blurring of vision)

3.4.1.2 Indications for Steroid Therapy

1. Type I lepra reaction (severe)
2. Type II lepra reaction (severe)
3. Neuritis and/or signs of early nerve dysfunction of less than 6 months duration.
4. Skin lesion in reaction in the vicinity of a trunk nerve.

Criteria for severe reaction.

- Loss of function of the nerves less than 6 months.
- Tenderness of the nerves
- Iritis
- Bone and testes involvement.
- Ulceration of the lesion in reaction
- High fever - severe general symptoms.

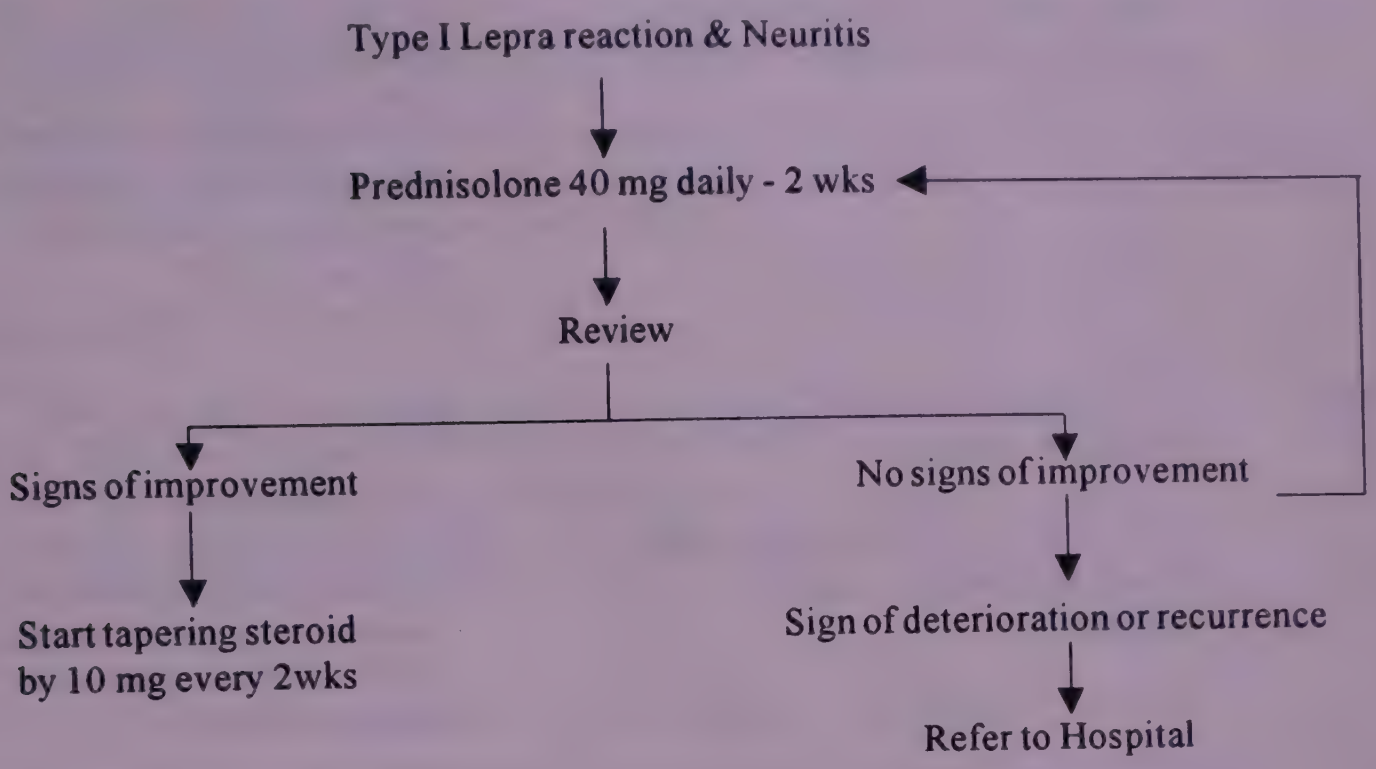
Recommended schedule of steroid therapy

Prednisolone 40 mg daily - 2 wks
Prednisolone 30 mg daily - 2 wks
Prednisolone 20 mg daily - 2 wks
Prednisolone 15 mg daily - 4 wks
Prednisolone 10 mg daily - 4 wks
Prednisolone 5 mg daily - 4 wks
Stop Prednisolone

Starting dosage of prednisolone may also be determined as 1.0 mg per kg bodyweight per day. Ideally it is advisable to administer as a single dose in the morning with supportive measures like antacids if needed.

If there is any evidence of peptic ulcer, Hypertension Concurrent tuberculosis, diabetes, pregnancy, the patient must be referred to the Medical Officer

3.4.1.3


Type I Lepra reaction & Neuritis
Prednisolone 40 mg daily - 2 wks
Review
Signs of improvement
No signs of improvement
Start tapering steroid
by 10 mg every 2wks
Sign of deterioration or recurrence
Refer to Hospital

3.4.1.4 Type II lepra reaction

Type II Lepra reaction generally responds to steroid therapy within a week and hence tapering can be initiated soon (Provided there is no neuritis)

ENL repeatedly occurring i.e. more than 4 times in a year is called Recurrent ENL.

Recurrent ENL reaction (Type II) or Steroid dependency : ENL reaction can reccur during or immediately after cessation of steroid therapy.

- Start full dose of steroid (40 mg) + Clofazimine 100 mg thrice a day - 1 month
- Review every 2nd week
- If signs of improvement present

Start tapering steroid — Start reducing the dose
Clofazimine - 100 mg twice a day for 1 month
Clofazimine - 100mg daily

Continue clofazimine 100 mg daily till the patient remains reaction free for a period of one year.

3.4.1.5 Supportive physiotherapy measures for neuritis

Nerve involved	Early sign	Management
Ulnar	Anaesthesia of medial 1/3 of palm. Weakness of abductor digiti minimi. *Test:* Ask the patient to abduct the little finger against resistance (Hand should be rested and wrist stabilised while testing)Compare both sides.	a) Keep the affected part warm covering with linen. b) Give sling for rest (elbow at 110° to 120° extension.) c) Use hand elevating sling if there is oedema (as in post operative cases) d) Apply plaster slab 2" below axilla to tip of fingers, elbow in 120° extension. Forearm in mid-prone position, wrist extended to 10° to 15° M.P. flexed to 90° I.P. joints extended.
Median	Anaesthesia of lateral 2/3 of palm. Weakness of thumb. *Test:* Ask the patient to oppose the thumb & little finger against resistance	a) Keep the affected part warm. b) Give sling (elbow at right angle.) c) Apply plaster slab. Mid forearm to tip of fingers. Supinated position/Wrist in 10° extension. M.P. at 90° I.P. extended Thumb-abducted-opposed and medially rotated. (Abduction-Thumb at rt.angles to the palm)
Radial	Anaesthesia of dorsum of the hand Weakness of extensors. *Test:* Ask the patient to close the fist and extend the wrist against resistance	Cock-up splint with wrist in extension (10°-15°) Splint to extend from mid-forearm to distal palmar crease
Lateral Popliteal	Difficulty in dorsiflexion of the foot. Test against resistance.	Posterior slab (knee in 10° flexion, ankle at 90°) Slab usually kept for 6wks.
Posterior tibial	Anaesthesia of the sole of the foot.	To use stockings Posterior slab from below knee to toes (Ankle at 90°)
Facial	Difficulty in closing the eye. *Test:* Ask the patiest to close the eye and try to open against resistance.	To use scarf for warmth. Refer the patient.
Trigeminal	Anaesthesia of cornea *Test:* Touch the cornea carefully and gently with cotton wisp. Watch for "Blink reflex"	Give eye shade. Lubricant for cornea. Liquid paraffin used to prevent dryness of cornea.

4.0.0. DISABILITY PREVENTION AND REHABILITATION

4.1.0. Disability prevention is one of the most important components in leprosy control. It is primary prevention involving early diagnosis and treatment. New cases with deformity at the time of detection and cases developing deformity during treatment should need disability limitation and rehabilitation.

1. Impairment: Any loss or abnormality of psychological, Physiological anatomical structure or function. It represents disturbance at organ level.
2. Disability is defined as any restriction or lack (resulting from impairment) of ability to perform an activity in a manner or within range considered normal for a human being.
3. Handicap is defined as disadvantage for a given individual, resulting from an impairment or disability, that limits or prevents the fulfillment of a role that is normal (depending on age, sex, social and cultural practice) for that individual.

4.2.0. WHO Grading

Hands

Grade 0: no anaesthesia, no visible deformity or damage

Grade 1: anaesthesia present, but no visible deformity or damage.

Grade 2: visible deformity or damage present.

Eyes

Grade 0: no eye problems due to leprosy; no evidence of visual loss.

Grade 1: eye problems due to leprosy present, but vision not severely affected as a result (vision 6/60 or better; can count fingers at six metres).

Grade 2: severe visual impairment (vision worse than 6/60; inability to count fingers at six metres).

4.3.0. Disability Prevention

Primary disability in leprosy occurs as a result of nerve damage

They are

1. Loss of sensation
2. Muscle paralysis

The nerve damage may occur gradually over a period of time during the course of disease. It may also be of acute onset as a result of neuritis (reactional states)

Secondary disability which is due to neglected primary disability include the following.

1. Ulcers mainly over the extremities
2. Fixed joints
3. Contractures
4. Fissures
5. Exposure Keratitis/Corneal ulcer leading to other complications.

4.3.1 Prevention of Primary Disability

4.3.1.1 Risk Factors

Following are the probable risk factors which may lead to primary disability.

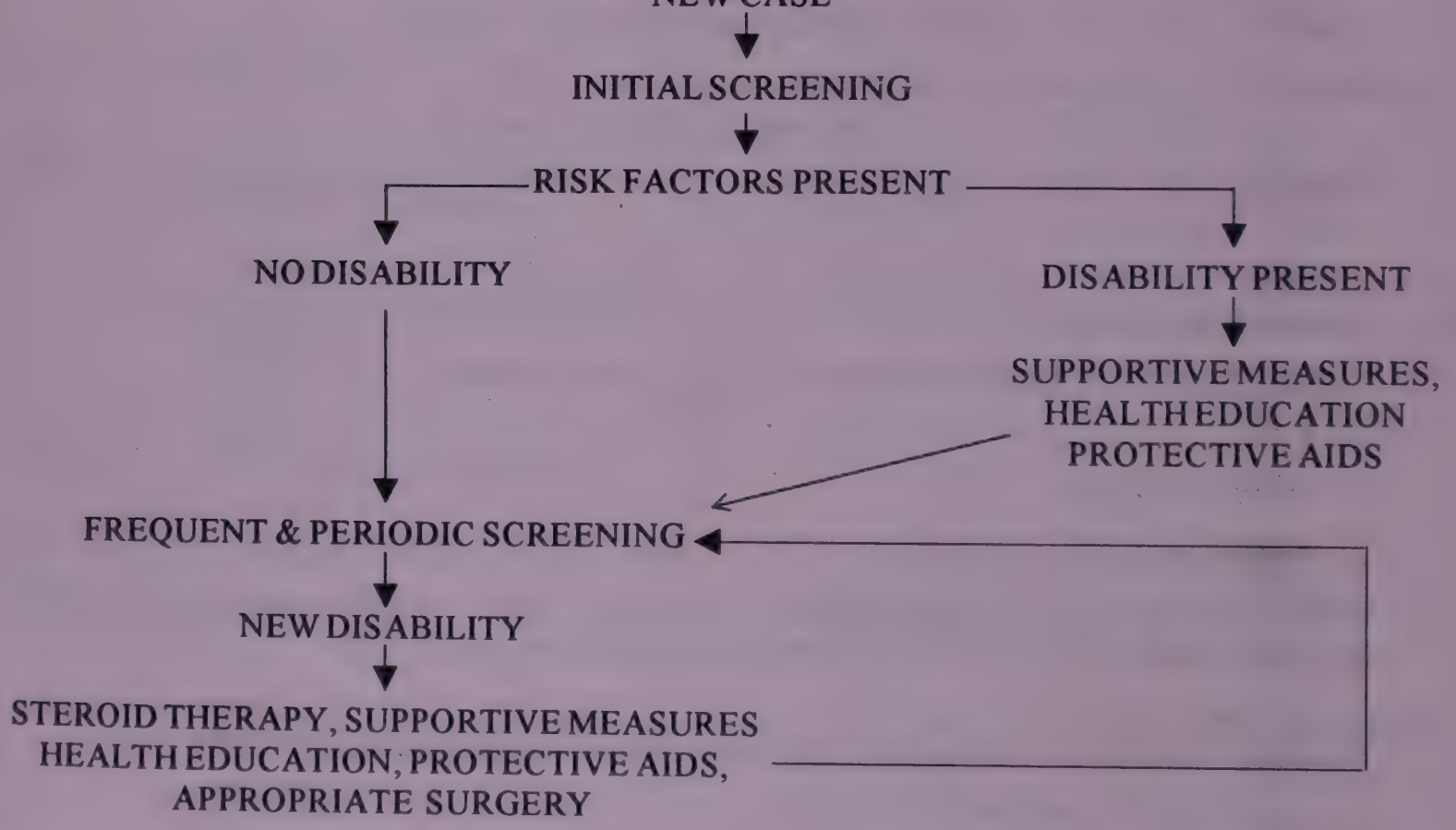
1. Multiple lesions
2. Skin lesions in the vicinity of nerve trunk
3. Skin lesion over face
4. Nerve thickening and tenderness.
5. Pregnancy and lactation

When a new case is registered for treatment, presence of risk factors is to be identified. Those patients with one or more risk factors are the ones who are more at risk of developing primary disabilities. These patients are to be identified and screened more frequently in order to identify the complications at an early stage and implement intervention measures.

4.3.1.2. Signs of Early Nerve Damage:

1. Thickening, pain and/or tenderness of nerves.
2. Tingling, burning sensation or numbness over the area supplied by the nerve.
3. Appearance of impairment or total loss of sensation over the area supplied by the nerve.
4. Onset of muscle weakness and/or total paralysis.

During antileprosy treatment the patients should be reviewed once every month & during surveillance, they should be screened atleast once every third month. At each screening, sensory examination and VMT need to be carried out along with examination of peripheral nerves.



4.3.2. Prevention of Secondary Disability:

4.3.2.1 Risk Factors: Presence of Primary Disability.

1. Loss of sensation over extremities
2. Paralysis of muscles
3. Loss of sweating (or) Palmoplantar fissures
4. Corneal anaesthesia

Patients having one or more of the risk factors are the high risk group. They should be identified. They require more frequent and periodic screening, and support.

Pre Ulcerative Conditions

Extremities

1. Callosity
2. Fissures
3. Red spots
4. Blisters

Eye

1. Irritation, watering and pain in eye with or without redness.

4.3.2.2 Strategy

1. Patient Education
2. Demonstration of Procedures
3. Provision of Protective aids
4. Follow up

A) Anaesthesia over extremities:

1. Careful handling of hot objects
2. Care while near fire
3. Avoid injuries/undue pressure

B) Fissures in hands and feet:

1. Wash and soak in water for 15 to 20 minutes.
2. Scrape out the dead skin.
3. Apply any cheap vegetable oil.

C) Ulcers in hand and feet

1. Rest
2. Dressing
3. Protective foot wear
4. Avoid undue pressure during walking (or) work
5. Inspect foot every day for preulcerative conditions

D) Paralysis : 1. Exercises
   i) Active
   ii) Passive
   2. Oil massage
   3. Reconstructive surgery

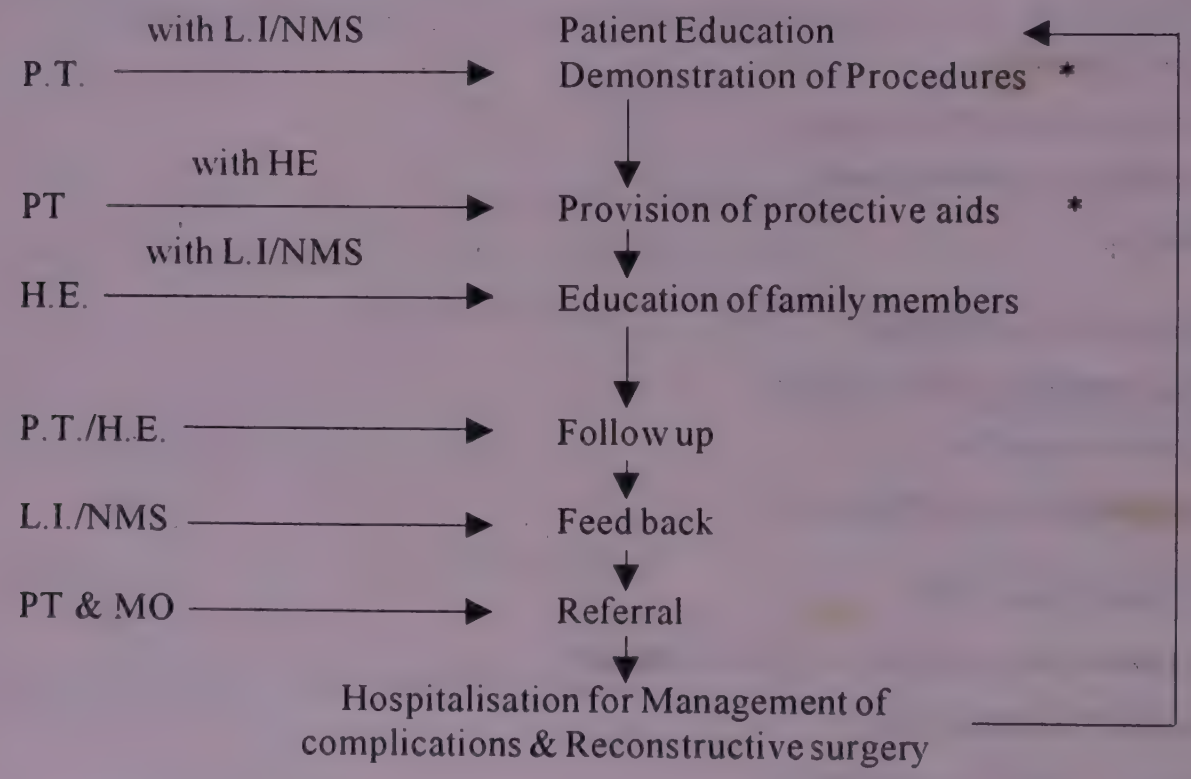
E) Eye : 1. Protective spectacles
   2. Blink exercise
   3. Bandaging the eye while sleeping
   4. Moisturiser application (Methyl cellulose tear drops or liquid paraffin drops or pure castor oil drops.)

Schedule of activities and Persons responsible:

(NMA)/L.I./NMS/Physiotechnician/Health Educator

Physiotechnician with guidance from Medical Officer co ordinates the various activities.

Physiotecnician - Identify high risk group



* Can be done in the field either at leprosy clinic (or) in the village. Groups of patients may be hospitalised for training purpose.

4.4.0. REHABILITATION

This involves medical, social and vocational measures to restore an individual with disability to his former state of health to the extent possible so as to enable him to be useful member of the society.

5.0.0. LEPROSY CONTROL AND MANAGEMENT

5.1.0. There are an estimated 1,340 000 cases in India of which 1,160 000 are registered. 60 to 80% of cases belong to paucibacillary type. Males are affected slightly more than females (1.6 : 1.0). peak incidence is at 10-20 years of age. 15 to 20% of new cases in India are children.(1993)

The disease is caused by a microorganism called Mycobacterium leprae. It is specific to human being, i.e., it causes disease only in the human beings. It is a slow-growing organism preferring cooler parts of the body and is discharged in the nasal secretions of a multibacillary case. Transmission of infection is through droplets from the nasal secretions of the full-blown case. The incubation period, i.e., the time interval from the entry of organism to the point at which signs and symptoms of disease are manifested, is on an average 2 to 5 years. Skin and nasal mucosa are the sites through which the organism enters the body and establishes infection.

There is no primary method of prevention of the disease either in the form of vaccine or a drug. Control of the disease rests solely on early diagnosis and treatment, and disability limitation and rehabilitation. Diagnosis is by active method like surveys or passive methods like voluntary reporting or referral. Treatment is with multiple drugs.

5.2.0 National Leprosy Eradication Programme

5.2.1 Basic facts: (1990)

Estimated Population	:	847,420,864
No. of states and UTs	:	32
Total number of districts	:	435 *
No. of high endemic districts	:	201 *
No. of districts under MDT (June 1990)	:	130 *
Estimated no. of cases	:	2,764,000

* Varying from year to year due to bifurcation of big districts.

The National Leprosy Eradication Programme is a disease specific centrally sponsored programme which was introduced in 1983 with the intention of covering 201 districts with a case load of more than 5 per every 1000 population with multidrug therapy.

5.2.2 Objectives of NLEP Programme:

1. To render all infectious cases non infectious in a short period so as to interrupt the chain of transmission of infection in the community;
2. To prevent the emergence of drug-resistant strains of M. leprae;
3. To ensure early detection and treatment of cases to prevent deformities;
4. To carry out systematic health education activities with a view to disseminate important facts about leprosy and to remove social stigma;

5.3.0 Plan of Action:

The MDT Programme is implemented in four phases. They are:

1. Mobilisation phase
2. Planning & preparatory phase
3. Intensive phase and
4. Maintenance phase

5.3.1 Mobilisation Phase:

1. Positioning of sanctioned staff and provision of infrastructure. At least 80% of the technical staff (PMW,NMS) are in position. The DLO, MO, LT & PT should also be in position.
2. All the technical staff should have undergone basic training.
3. At least 80% of the population should have been surveyed and
4. Other health staff (PHC,ICDS,GPs, Traditional Practitioners) should be involved.

5.3.2. Planning & Preparatory Phase:

1. Sample survey (SSAU Guideline, GOI) should be carried out to validate data and arrive at baseline estimates
2. Rapid survey should be carried out using flash cards to detect hidden cases. It should be completed within 6 months.
3. School survey
4. Orientation training should be given to all the technical staff of the programme and also other health staff
5. Establishing drug delivery points:
   - The DDPs should not be more than 3 km. of walking distance for majority of leprosy patients in village(s)
   - The DDPs should be easily accessible by road
   - Whenever feasible existing PHC/ICDS facilities may be utilised.
6. Systematic screening both clinical & bacteriological of all cases detected and existing should be done. It involves:
   - assess disease activity
   - deletion of cases satisfying the eligibility criteria (all bacteriologically negative clinically inactive PB cases)
   - listing out all inactive cases for further surveillance to detect relapses if any
   - typing the cases
   - Grouping of cases (PB/MB)
   - Clinical examination & minimum laboratory investigation (Hb%; urine for albumin, sugar, micro and bile salts & pigments; chest x-ray & sputum for AFB if required) to decide the fitness of cases for MDT
   - Preparing individual case cards including charting.

7. Establishing circuit plan of treatment delivery
   - Two subcentres are clubbed to form one circuit
   - Each circuit may have 10-15 drug delivery points
   - Circuit time table for the entire calendar year should be drawn.
8. Wide publicity should be given about the programme. The formal and informal leaders should be contacted, informed, and their cooperation sought. Notice boards containing the address of DDP should be displayed in prominent places in all villages.

5.3.3 Intensive Phase:

Important activities that are carried out during this phase are case finding and treatment supported by health education and rehabilitation.

5.3.3.1 Case Finding:

There are two different methods of case finding, active and passive. In active method the staff do house, or contact (of cases, once a year) or school (once a year) or high-risk group surveys like slum survey. Passive method includes cases detected through voluntary reporting or referral by other health staff.

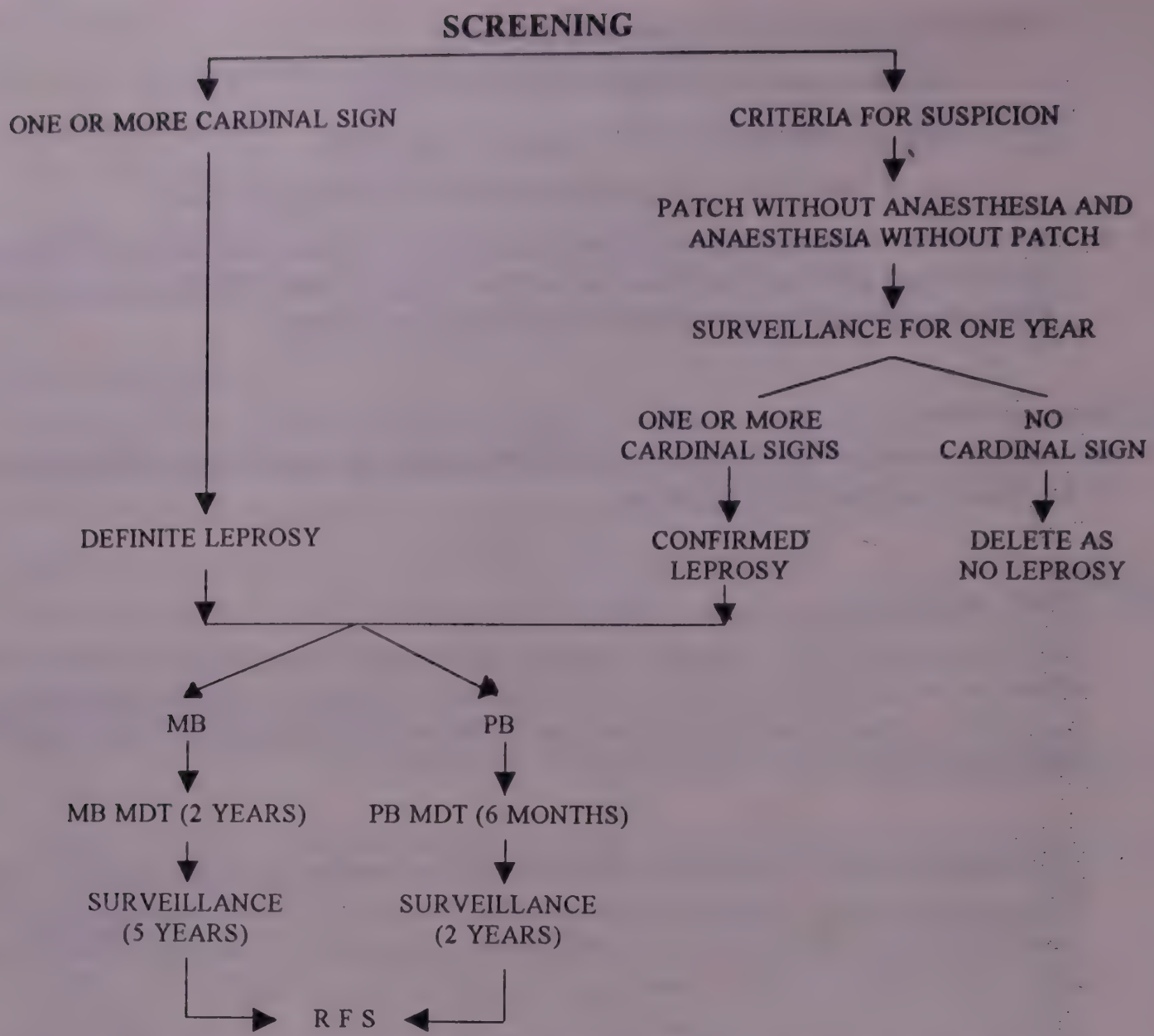
Each PMW has 20-25 thousand population in his subcentre. He is allotted 12-15 days a month for population survey. If on an average a worker can examine 70-80 persons a day, he can cover about 8,000 population in one year and the entire population of his area in about 3 years.

Not more than four days a month may be allotted for contact population survey. A large proportion of contacts could be examined during PCD, 1/3 to 1/2 of contact population may be covered during population survey. Each eligible contact should be examined at lease once a year till the index case is released from surveillance.

School survey may be carried out in July and August. The worker should obtain the following information:

* No. of schools in the subcentre
* No. of children enrolled in schools

This information should be updated every year.



5.3.3.2. Chemotherapy: All cases that are detected are immediately registered for treatment after proper investigation and categorisation. PB cases are given 6 pulsed doses in 9 months and MB cases are given 24 pulsed doses in 36 months. All cases of reactions and complications are recognised and managed. Treatment is delivered to patients at predetermined drug delivery points.

It is essential to screen all cases clinically every month during therapy to know the leprosy disease status and recognise early any complications including reaction.

A. The Medical Officer should look for :

- **pallor in conjunctiva, tongue & nails**
- **jaundice (Yellow discoloration of conjunctiva)**
- redness in eyes
- appearance of new lesions or increase in size of old lesion
- tenderness in nerve
- rashes
- ulcers in hands & feet

B. All high risk cases should be subjected to VMT in addition at least once in 3 months during therapy. The patient should also be advised to report immediately if he gets

- pain in abdomen
- yellowish discoloration of eyes/urine
- redness and irritation in eye
- fever and malaise
- itching
- rashes
- joint pain
- impairment of vision

C. Indications for hospitalisation

a. patients with any evidence of severe reaction

b. patients with evidence of muscle weakeness or loss of sensation within last six months

c. patients with infected ulcers

d. patients with red eyes

e. patients with painful eyes

f. patients with impairment or loss of vision

g. patients with any other acute illness

D. Assure regularity of treatment

1. The patient should be explained the need for regular treatment (by PMW & MO)
2. The family members should be explained the consequences of irregular treatment (by PMW & NMS)
3. Issuance of ''cards'' to the patients with clinic-due dates printed on it.
4. Preclinic contact by PMW to remind the patient.
5. Motivation of patient if he fails to attend clinic by personal contact and education by PMW/NMS/HE
6. Posting defaulter cards.
7. Periodic tablet count test to monitor consumption compliance. Each PB case should be monitored for consumption compliance through tablet - count-test at least twice and MB case at least 6 times during therapy. Tablet count should be done without explaining the purpose of the check. If the patient is found not regular in consumption then special effort must be made to find the reason and motivate him. Wherever it is feasible urine spot test can also be done.

For example: 2nd June (I clinic)..... After a week or more but not more than 15 days..... 30th (II Clinic)

E. Criteria for discharge

1. PB

a) Patient has completed 6 pulsed doses in 9 months.

b) No new lesions have appeared in the last two months.

c) Not in reaction

d) A patient having taken a few doses and absenting continuously for sometime reports back. Clinical & bacteriological assessment are done. If inactive he can be released from treatment but if active continue treatment till he completes a total of 6 pulsed doses.

Note: If there is appearance of new lesions in the last 2 months of therapy, the treatment has to be extended for another 6 pulsed doses.

2. MB

a) Patient has completed 24 pulsed doses in 36 months.

b) Any interruption in treatment due to complication or absence, continue treatment till he completes 24 pulsed doses & then release.

F. Disability Care

Patients with plantar anaesthesia should be educated in foot care, provided foot wear and monitored every month during therapy for threatened ulcer.

Patients with Plantar ulcer should be educated in foot care, and also advised to give rest to the foot and antibiotics are given if infected.

5.3.3.3 Surveillance

A Paucibacilaary case is released from treatment after taking 6 pulsed doses in 9 months and if the initial lesion is not extending or no new lesions have appeared. An MB case is released from treatment after 24 monthly pulsed doses have been taken in 36 months. The PB case after release is screened clinically once a year for two years and MB once a year both clinically and bacteriologically for 5 years for early detection of possible relapse.

Health Education

When the patient is released from treatment, the Health Worker has to give clear explanation to the patient that his disease is cured and it is not necessary to continue the treatment. He should also instruct that if any new lesions appear or if any weakness occurs, (any changes) he should immediately report to the health staff.

DIFFERENCES BETWEEN TYPE I REACTION AND RELAPSE

	Type I Reaction	Relapse
Time interval	Generally occurs during chemotherapy or within 6 months of stopping treatment	Occurs only when chemotherapy has been discontinued usually after an interval of at least 6 months.
Onset	Abrupt and sudden;	Slow & insidious
Old lesion	Existing lesions become erythematous and considerably swollen and odematous	Only the margin of the lesion may show erythema and infiltration
New lesion	Several new lesions appear	New lesions are minimal
Ulceration	Lesions might ulcerate	Ulceration does not occur.
Nerve involvement	Multiple nerve involvement common, and painful	Nerve involvement may occur only in a single nerve; no pain or tenderness
General condition	Fever, joint pains, malaise	Not affected
Response to steroid treatment	Rapid	No response

Note: Whenever a patient is treated with steroid, it should be done under the cover of anti-leprosy drugs.

5.4.0. Evaluation

Evaluation is an important component of any public health programme. It helps in improving the programme; to improve services for delivering them; to guide allocation of resources.

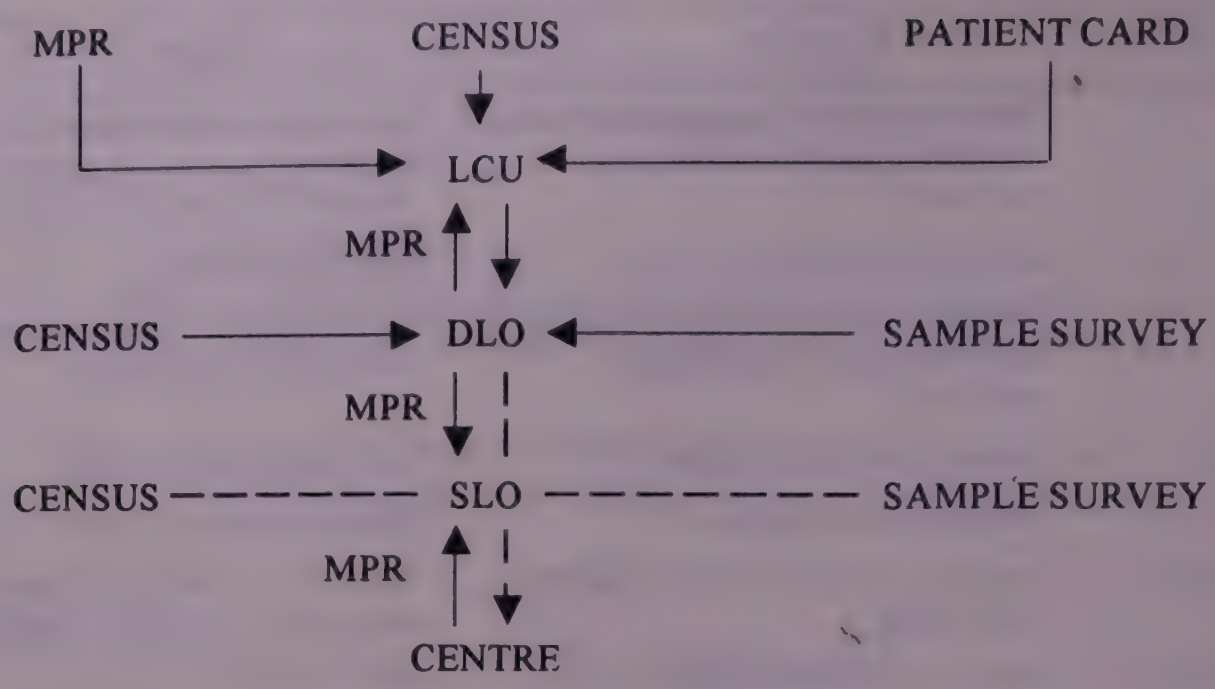
What is evaluation?
It is the systematic process of measuring the results of implementation of the programme against predetermined quantified objectives.

What is Monitoring?
It is a part of evaluation. If involves day-to-day follow up of various activities and resources by comparing scheduled activities with actual activities; identification of reasons for shortcomings or achievement, and indications for any shortcomings.

Monitoring and evaluation require an information system for collecting relevant data by various methods, processing, analysis and communication of information to programme planners & administrators about the nature and extent of the problems; checking for errors, sorting, shifting and collating, analysing and dissemination.

It is imperative to monitor and ensure that all the activities scheduled are carried out during the mobilization and preparatory phases to decide on the preparedness of the area for MDT.

5.4.1. Information system in NLEP



There is need for clear definition of terms as uniformity is essential for the purpose of comparison.

There are two categories of basic information in NLEP: Patient cards and registers. The data from these sources are summarised into Monthly Progress Report (MPR). The information that should be included in the MPR depends on the essential indicators required for monitoring and evaluation.

Project Name:

QUESTIONNAIRE **B**

Annual Report 19__

ILEP CODE (If known): |_|_|_|_|_|_|_|

091	SIZE OF AREA COVERED (Km²)	
092	POPULATION OF THE AREA COVERED	
093	AMONG 092, POPULATION BELOW 15 YEARS	
	OR PROPORTION	%
094	NUMBER OF CLINICS/UNITS COVERED	

For 091 - 092 - 093
Specify source of information:

_____

100 - ALL LEPROSY PATIENTS ON REGISTER (Monotherapy + MDT)*

CH For Chemotherapy*

CODES	CATEGORIES*	MB*	PB*	MB + PB
101	TOTAL PATIENTS ON JAN 1st 19__			
102	NEW CASES NEVER TREATED BEFORE			
103	RELAPSED*			
104	RESUMED TREATMENT*			
105	OTHER ADDITIONS*			
106	TOTAL ADDITIONS (102 + 103 + 104 + 105)			
107	DIED			
108	COMPLETED TREATMENT AS PRESCRIBED*			
109	OUT OF CONTROL*			
110	OTHER DEDUCTIONS*			
111	TOTAL DEDUCTIONS (107 + 108 + 109 + 110)			
112	TOTAL PATIENTS ON DEC 31st (101 + 106 - 111)			

114	OUT OF TOTAL 112	REGULAR PATIENTS			
115	ATTENDANCE AT	IRREGULAR PATIENTS			
116	TREATMENT*	UNKNOWN			

S For Surveillance*

117	NUMBER OF PATIENTS ON JAN 1st			
118	HOW MANY EXAMINED DURING THE YEAR?			
120	NUMBER OF PATIENTS ON DEC 31st			

C For Care*

121	NUMBER OF PATIENTS WHO ARE IN THE REGISTER ONLY FOR CARE ON DEC 31st?	

*See list of definitions

ALL	Patients on register on Dec 31st (112 + 120 + 121)

150	TOTAL NUMBER OF FEMALE PATIENTS	
151	TOTAL NUMBER OF MALE PATIENTS	
152	TOTAL NUMBER OF PATIENTS (150 + 151)	
153	AMONG TOTAL 152, HOW MANY CHILDREN (0 - 14)?	
154	AMONG TOTAL 152, HOW MANY DISABLED (WHO Grades 2 - 3)?	

200 - ALL NEW CASES DETECTED DURING THE YEAR

NEW	Never treated before

	CATEGORIES		MB*			PB*			MB + PB		
	AGE GROUPS		0 - 14	15 +	TOTAL	0 - 14	15 +	TOTAL	0 - 14	15 +	TOTAL
	REGISTERED FOR	MALES									
		FEMALES									
202	CHEMOTHERAPY	TOTAL									
213	SMEARED PATIENTS										
223	WITH WHO DISABILITY GRADES*	0									
224		1									
225		2									

202 - (224 + 225) = 223

NEW	Case detection activities

226	MODE OF DETECTION*	PERSONS EXAMINED	CASES FOUND
227	NOTIFICATION/REFERRAL		
228	VOLUNTARY/SELF REPORTED		
229	GENERAL SURVEY/MASS SURVEY		
230	CONTACT SURVEY		
231	GROUP SURVEY (Schools...)		
232	UNKNOWN		
233	TOTAL EXAMINED/FOUND		

* See definitions

300 - MDT PATIENTS ON REGISTER*

MDT | **For treatment**

NIL ☐

CODES	CATEGORIES	MB*	PB*	MB + PB
301	TOTAL PATIENTS ON JAN 1st 19__			
302	NEW CASES NEVER TREATED BEFORE			
303	RELAPSES AFTER MDT*			
304	RESUMED TREATMENT*			
305	OTHER ADDITIONS*			
306	TOTAL ADDITIONS (302 + 303 + 304 + 305)			
307	DIED			
308	COMPLETED TREATMENT AS PRESCRIBED*			
309	OUT OF CONTROL*			
310	OTHER DEDUCTIONS*			
311	TOTAL DEDUCTIONS (307 + 308 + 309 + 310)			
312	TOTAL PATIENTS ON DEC 31st (301 + 306 - 311)			

313	OUT OF TOTAL (301 + 306) NUMBER OF PATIENTS SMEARED DURING THE YEAR			

314	OUT OF TOTAL 312	REGULAR PATIENTS			
315	ATTENDANCE AT	IRREGULAR PATIENTS			
316	TREATMENT*	UNKNOWN			

MDT/S | **For surveillance after MDT**

NIL ☐

317	NUMBER OF PATIENTS ON JAN 1st				
318	HOW MANY EXAMINED	CLINICALLY			
319	DURING THE YEAR?	BACTERIOLOGICALLY			
320	NUMBER OF PATIENTS ON DEC 31st				

* See definitions

DRUG REGIMENS USED IN THE PROGRAMME: See next page

Drug regimens used in the programme

NIL ☐

321	CASES	R		DRUGS	DOSAGE	FREQUENCY	DURATION
	MB CASES ONLY (If more than 2 regimens, use additional sheets)	Regimen 1	1				
			2				
			3				
			4				
		Regimen 2	1				
			2				
			3				
			4				
	PB CASES ONLY (If more than 2 regimens, use additional sheets)	Regimen 1	1				
			2				
			3				
			4				
		Regimen 2	1				
			2				
			3				
			4				

400 - SPECIAL SERVICES FOR THE PATIENTS OF THE PROJECT

Hospital services (IN-PATIENT CARE)

NIL ☐

401	Nr. OF ADMISSIONS OF LEPROSY PATIENTS	FOR MEDICAL REASONS	NEURITIS/REACTIONS	
402			RELAPSES	
403			IMPLEMENTATION OF MDT	
404			OTHER	
405		FOR SURGICAL REASONS	ULCERS/WOUNDS	
406			RECONSTRUCTIVE SURGERY	
407			EYE OPERATIONS	
408			OTHER	
409		TOTAL ADMISSIONS IN THE YEAR		

410	LEPROSY PATIENTS	Nr. OF BEDS AVAILABLE	
411		TOTAL IN-PATIENT BED-DAYS	

412	NON-LEPROSY PATIENTS[1]	TOTAL ADMISSIONS	
413		Nr. OF BEDS AVAILABLE	
414		TOTAL IN-PATIENT BED-DAYS	

Out-patients services (AMBULATORY, OPD...)

NIL ☐

415	LEPROSY PATIENTS RECEIVING	PROTECTIVE FOOTWEAR/PROSTHESES	
416		PHYSIOTHERAPY (& Prevention of disabilities)	
417		EYE CARE (or Nr. of consultations) (Specify)	
418		CARE OF PLANTAR ULCERS	

419	Nr. OF NON-LEPROSY PATIENTS[1]	

[1] See also section 600

ARE THE SERVICES PROVIDED FREE OF CHARGE?: (YES - NO)

Please give details

INDICATORS FOR MONITORING FIELD PROJECTS

1. Definition

Indicators are simple calculations which can be used to monitor the progress made by a project.

Indicators are a measurement of a project's performance; thus project managers can use them as a tool to help in the planning and running of their projects.

They are calculated on a yearly basis from data recorded in the ILEP Questionnaire B.

2. Selection of indicators

A total number of performance indicators have been chosen, having two objectives:

- to assess whether the control measures employed by the project are affecting the transmission of leprosy;
- to monitor the implementation of MDT.

3. Indicators for monitoring leprosy control programmes

Function monitored	Indicators
Prevalence	I. Prevalence rate of registered cases for chemotherapy.
Case Detection	II. Case detection rate of all patients. III. Case detection rate of all children. IV. Proportion of MB cases among newly detected cases. V. Proportion of children among newly detected cases. VI. Proportion of disabled among newly detected cases.

These indicators will permit an evaluation of the success of the leprosy control measures used by the project. If calculated over a number of years, some will reveal trends in the pattern of leprosy within the population.

Prevalence (indicator I)

The standard epidemiological indicators are measurements of the prevalence rate and incidence rate. While the prevalence rate of leprosy is readily available, most leprosy control programmes cannot provide sufficient data on which to calculate the incidence rate.

Case Detection (indicators II-VI)

These allow an indirect assessment of the incidence rate of the disease. Case detection rates, and also the proportion of MB and child cases among newly detected cases, will be influenced by the type and intensity of case finding activities. If case detection surveys are carried out systematically and regularly, after some years it is expected that the proportion of MB cases among newly detected cases will increase; while the proportion of child cases will decrease.

The proportion of disabled (WHO Grade 1and 2) among newly-detected cases is an important indicator of the operational efficiency of case detection activities. If the case detection activities carried out by a project are effective, all cases would be detected before the patients suffer deformity.

* In the ILEP Directory, this includes projects outlined as Leprosy Control and others outlined as Treatment which carry out case detection activities.

COMMUNITY HEALTH CELL
LIBRARY
and
Information
Centre
BANGALORE

DR-300
12568 M94

4. Indicators for MDT Treatment and follow-up

Functions monitored		Indicators
Diagnosis	VII.	Proportion of all new cases smeared.
	VIII.	Proportion of MB cases on MDT
Treatment	IX.	Proportion of MB cases on MDT
	X.	Proportion of PB cases on MDT
	XI.	Proportion of MB cases on regular treatment at the end of the year
	XII.	Proportion of MB cases completing MDT treatment as prescribed.
	XIII.	Proportion of PB cases completing MDT treatment as prescribed
Surveillance	XIV.	Proportion of MB cases under surveillance examined clinically
	XV.	Proportion of PB cases under surveillance examined clinically
	XVI.	Proportion of MB cases under surveillance smeared.

The indicators listed above have been chosen to monitor the implementation of MDT. If recorded each year, these indicators will help project managers assess the operational efficiency of their projects, particularly with regard to the management of leprosy cases.

Diagnosis (indicators VII and VIII)

Ideally, a patient should be allocated to the MB or PB group following both a clinical and a bacteriological examination Indicators VII and VIII emphasize the use of skin smears in classifying leprosy.

It is more important to have reliable and accurate BI estimations from slit skin smears taken from a small number of patients, than to routinely carry out an unreliable bacteriological examination of large numbers of patients.

Treatment (indicators IX - XIII)

Information on the extent of MDT in a project is summarized by indicators IX and X. Many projects will introduce MDT on a pilot basis initially, but will then gradually increase the proportion of patients on MDT and reduce the proportion of patients on monotherapy. It is essential that all patients on MDT attend regularly for their treatment, hence indicators, XI, XII and XIII have been selected to monitor case-holdings of the project.

Surveillance (indicators XIV - XVI)

Projects using MDT should have an appropriate system for the surveillance of patients who have completed treatment. An annual examination will facilitate the early detection and treatment of relapses and reversal reactions. The extent of surveillance procedures can be monitored by calculation of indicators XIV, XV, XVI.

5. Calculation of indicators

Within the overall framework of the ILEP computerized system, it would be possible each year to calculate automatically the indicators listed in Appendix.

As from 1985, the data extracted from the Questionnaire B will be used to build up a record of indicators over consecutive years.

Each year, the co-ordinating Bureau will publish the current year's indicators together with the four previous years, thereby illustrating overall trends within the Federation.

On an individual basis, project managers may of course do the calculations themselves.

6. Interpretation of the calculations of indicators
The ILEP system does not yet provide automatic interpretation of the indicators. This is left to the initiative of each individual Member-Association, taking into account the circumstances and resources specific to each project.

Indicators and How to Calculate them
All numbers refer to the codes used in the ILEP Questionnaire B (codes 092, 093 and Section 100, 200 and 300)

Indicators for Leprosy Control Programme:

1. Examination coverage (year)

$$\frac{\text{Population examined}}{\text{Total population of the area (census corrected)}} \times 100$$

2. *Proportion of registered to estimated cases*

$$\frac{\text{No. of registered cases}}{\text{No. of estimated cases (by SS)}} \times 100$$

3. *Prevalence rate of registered cases of chemotherapy*

$$\frac{112\ (MB+PB)}{092} \times 100$$

New case: A case that has never been detected before by any health staff.
Old case: A Case under treatment.

4. *Case detection rate of all patients* (adults + children)

$$\frac{(202\ \text{total})\ (MB+PB)}{092} \times 1000$$

5. *Case detection rate of children* (0-14) only

$$\frac{(202\text{-}0\text{-}14)\ (MB+PB)}{093} \times 1000$$

6. *Proportion of MB cases among newly detected cases*

$$\frac{\text{(202 total) (MB)}}{\text{(202 total) (MB+PB)}} \times 100$$

7. *Proportion of children (0-14) among newly detected cases*

$$\frac{\text{(202, 0-14) (MB+PB)}}{\text{(202, total) (MB+PB)}} \times 100$$

8. $$\frac{\text{No. of cases detected by (Vol./GS/CS/SS/)}}{\text{Total no. of cases detected}} \times 100 \quad \frac{228/229/230/231}{233} \times 100$$

9. $$\frac{\text{No. of cases detected by GS}}{\text{No. of population examined through GS}} \times 100 \quad \frac{229\ (c)}{229} \times 100$$

10. $$\frac{\text{No. of new contact cases detected}}{\text{No. of contacts examined}} \times 100 = \frac{230\ (c)}{230} \times 100$$

11. $$\frac{\text{No. of new school child cases detected}}{\text{No. of school child population examined}} \times 100 = \frac{231\ (c)}{231} \times 100$$

12. *Proportion of disabled (WHO Grade 1 & 2) among newly detected cases*

$$\frac{\text{(225 total) (MB+PB)}}{\text{(202 total - 225-A) (MB+PB)}} \times 100$$

13. *Proportion of all new cases smeared*

$$\frac{\text{213 (MB+PB)}}{\text{(202 total) (MB+PB)}} \times 100$$

14. *Proportion of MB cases on MDT smeared*

$$\frac{\text{(313) (MB)}}{\text{(301 + 306) (MB)}} \times 100$$

15. *Proportion of MB cases on MDT*

$$\frac{\text{(301+306) (MB)}}{\text{(101+106) (MB)}} \times 100$$

16. *Proportion of PB cases on MDT*

$$\frac{(301 + 306)\ (PB)}{(101 + 106)\ (PB)} \times 100$$

17. *Proportion of MB cases on regular MDT treatment at the end of the year*

$$\frac{(314)\ (MB)}{(312)\ (MB)} \times 100$$

18. *Proportion of MB cases who have completed MDT treatment as prescribed*

$$\frac{(308)\ (MB)}{(301 + 306)\ (MB)} \times 100$$

19. *Proportion of PB cases who have completed MDT treatment as prescribed*

$$\frac{(308)\ (PB)}{(301 + 306)\ (PB)} \times 100$$

20. *Proportion of MB cases under surveillance after MDT, examined clinically*

$$\frac{(318)\ (MB)}{(317)\ (MB)} \times 100$$

21. *Proportion of PB cases under surveillance after MDT, examined clinically*

$$\frac{(318)\ (PB)}{(317)\ (PB)} \times 100$$

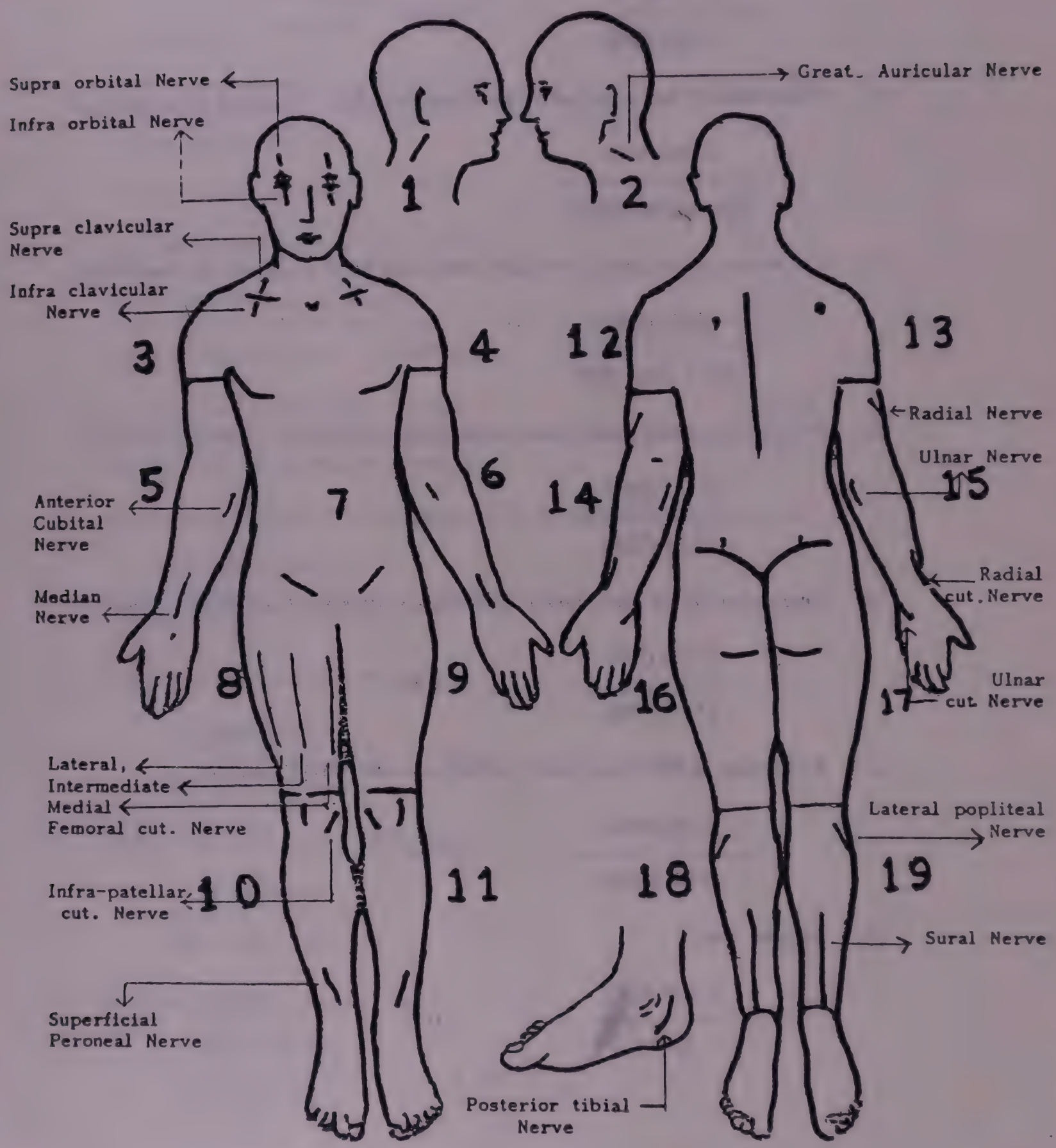
22. Proportion of MB cases under surveillance after MDT, smeared

$$\frac{(319)\ (MB)}{(317)\ (MB)} \times 100$$

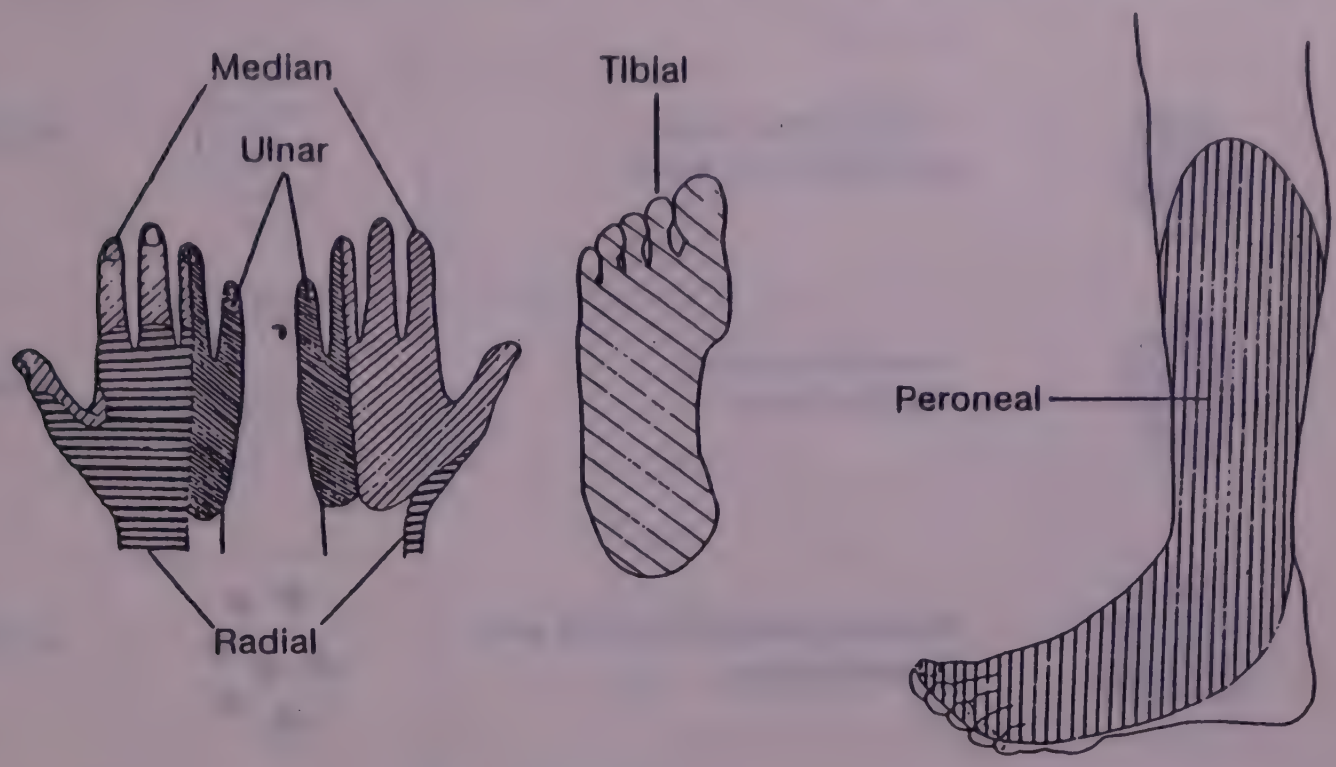
23. *Relapse rate:*

$$\frac{S\ 118\text{-}A\ (c)}{S\ 117} \times 100$$

CUTANEOUS AND TRUNK NERVES IN LEPROSY

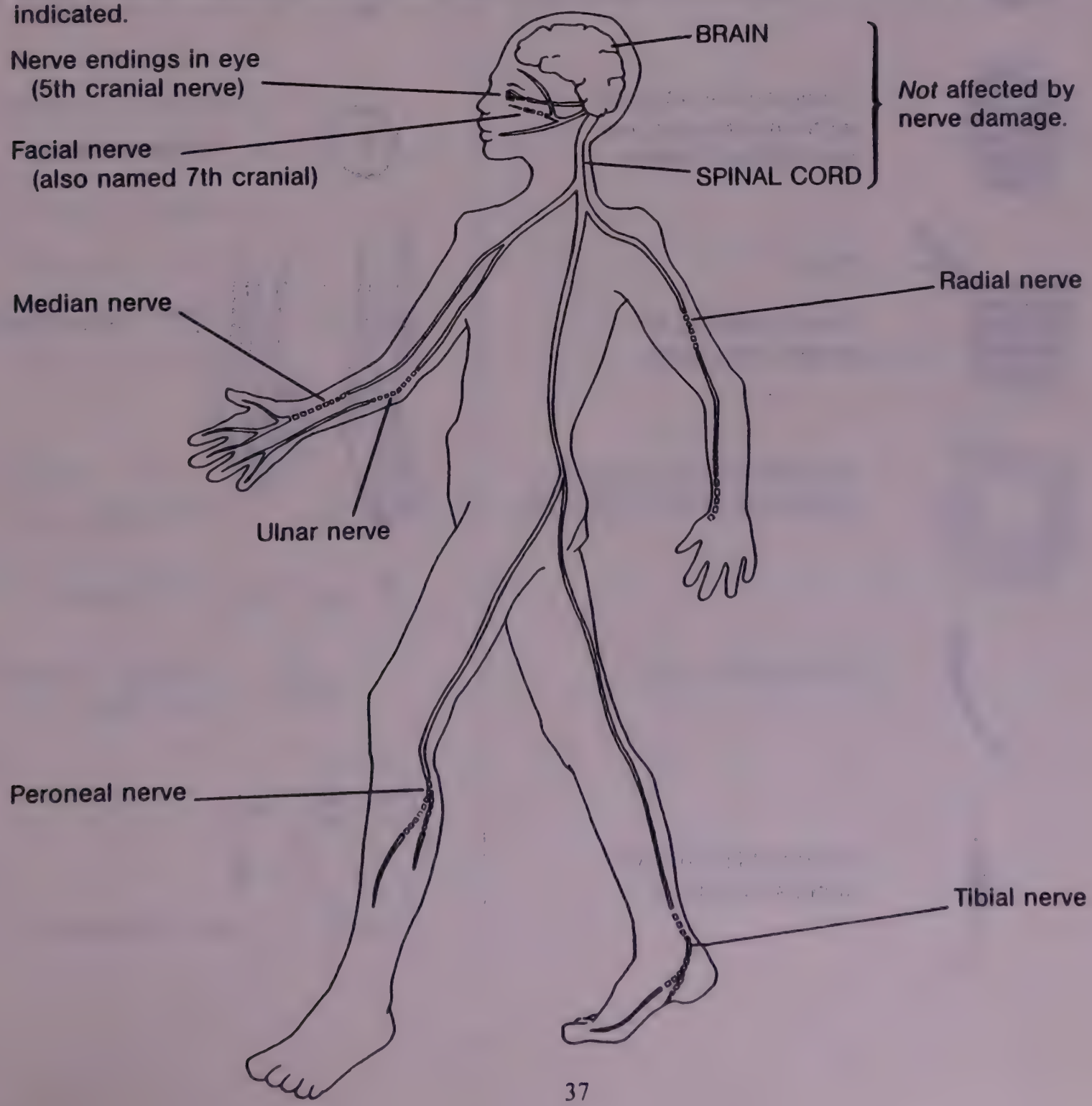


Skin areas in which sweating and sensation are lost following damage to main nerves



1. SITES OF NERVE DAMAGE

1.1 Much leprosy disability follows damage to the main nerves pictured below, at the sites indicated.



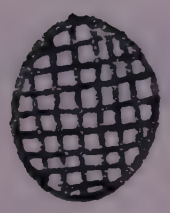
CHART

Hypopigmentation
by Horizontal lines

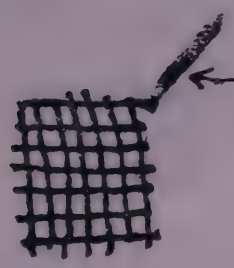
Anaesthesia by
Vertical lines

Hypopigmented Macule with
Anaesthesia

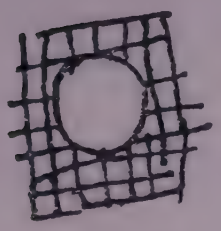
A well-defined Margin



Hypigmented Macule
with anaesthesia and
well-defined Margin.



Nerve entering an
anaesthetic patch

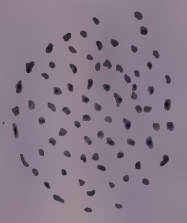


Anaesthetic hypopigmented
lesion with central clearance

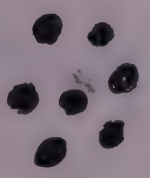
Enlarged Nerves

Enlarged Nerve with
abcess formation

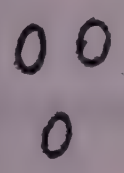
A Scaly lesion



Infiltration

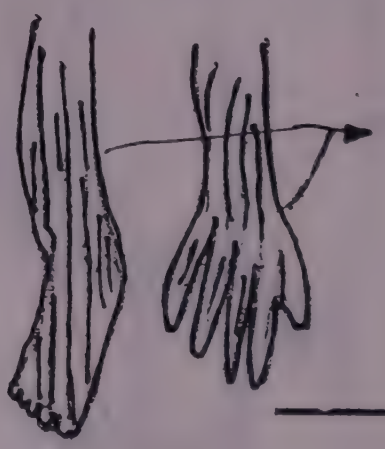


Nodules



E.N.L. Nodules

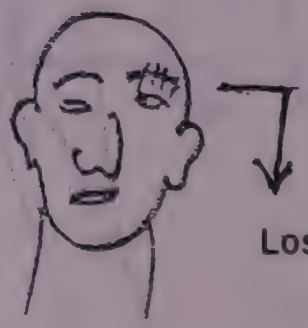
Gymaecomastia



Anaesthesia

Clawing

Collapse of bridge
of the Nose



Loss of Eyebrows

ANNEXURE II

MDT No. _____

SR No. _____

KCR No. _____

MB/PB LEPROSY PATIENT CARD

1. Identification

1.1 State/UT _____ 1.2 District _____

1.3 LCU _____ 1.4 Village _____

1.5 House No _____ 1.6 HH No. _____

1.7 Name 1.8 Father/husband's Name

_____

1.9 Year of Birth _____ 1.10 Sex _____

1.11 Marital Status _____ 1.12 Occupation _____

1.13 Address _____ 1.14 Religion & Caste _____

2. Leprosy Characteristics

2.1 Type I: IT ☐ BT ☐ PN ☐ BB ☐ BL ☐ LL ☐

2.2 Duration of disease _____

2.3 Date of detection _____

2.4 Date of registration _____

2.5 Mode of detection _____ GS/CS/V/SS/Ref/Others

3. Screening Date _____

3.1 Fit for MDT ☐ Unfit for MDT ☐

Reasons for unfitness

_____

_____

_____

Signature _____

DAMIEN FOUNDATION INDIA TRUST PROJECT _____

DISABILITY RECORD

Name _____ Village _____ Dt. of Regn _____

S/o, W/o,D/o _____ Sub Centre _____ Dt of RFT _____

Sex/Age _____ Type | I | P | TT | BT | BB | BL | LL | PB/MB Dt. of RFS _____

Occupation _____ Regn No. _____ PA/OPA _____

RIGHT						STRENGTH	LEFT					
						DATE						
						Vision (1,2,3)						
						Light Closure lid gap in m.m						
						Blink Present / Absent						
						Little finger out						
						Thumb up						
						Wrist Extension						
						Foot up						
						Disability Grade Hands						
						Feet						
						Eyes						
						Maximum Grade						
						Signature of Assessor						

Date	COMMENTS

STRENGTH KEY OF MUSCLES

S = Normal

W = Weak

P = Paralysed

VISION (C TEST) OR FINGER COUNT AT 6 METERS

1 Normal

2 Blurring Vision

3 Blindness

DISABILITY RECORD - FOLLOWUP

PALMS Right Left **SOLES** Right Left

Date :

TRUNK NERVES

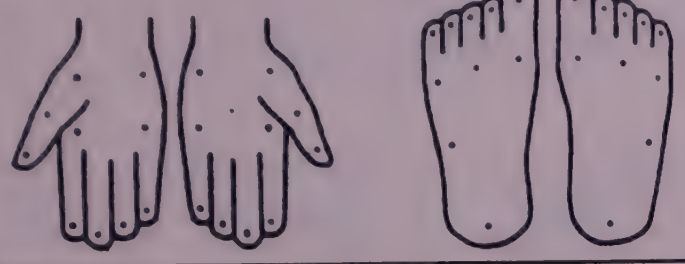
	Rt E	Rt T	Lt E	Lt T
U.N.				
M.N				
R.N.				
L.P.N				
P.T.N				

CUTANEOUS NERVES

	Rt E	Rt T	Lt E	Lt T
G.A.N.				
R.C.N.				
U.C.N.				
S.P.N.				
S.N.				

Any changes within the last 6 months Yes / No

Date :



TRUNK NERVES

	Rt E	Rt T	Lt E	Lt T
U.N.				
M.N				
R.N.				
L.P.N				
P.T.N				

CUTANEOUS NERVES

	Rt E	Rt T	Lt E	Lt T
G.A.N.				
R.C.N.				
U.C.N.				
S.P.N.				
S.N.				

Any changes within the last 6 months Yes / No

Date :

TRUNK NERVES

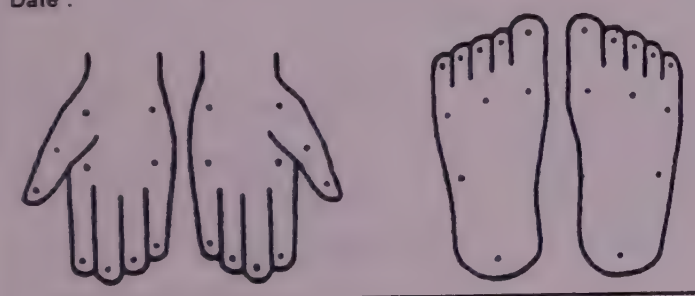
	Rt E	Rt T	Lt E	Lt T
U.N.				
M.N				
R.N.				
L.P.N				
P.T.N				

CUTANEOUS NERVES

	Rt E	Rt T	Lt E	Lt T
G.A.N.				
R.C.N.				
U.C.N.				
S.P.N.				
S.N.				

Any changes within the last 6 months Yes / No

Date :



TRUNK NERVES

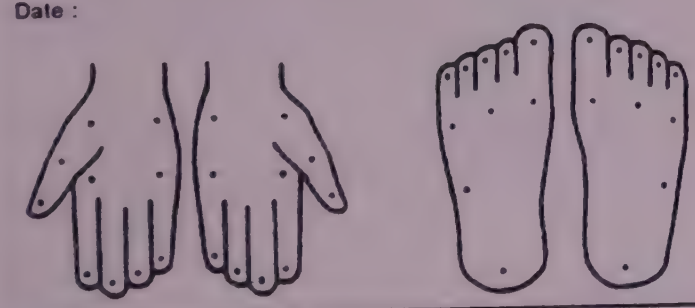
	Rt E	Rt T	Lt E	Lt T
U.N.				
M.N				
R.N.				
L.P.N				
P.T.N				

CUTANEOUS NERVES

	Rt E	Rt T	Lt E	Lt T
G.A.N.				
R.C.N.				
U.C.N.				
S.P.N.				
S.N.				

Any changes within the last 6 months Yes / No

Date :



TRUNK NERVES

	Rt E	Rt T	Lt E	Lt T
U.N.				
M.N				
R.N.				
L.P.N				
P.T.N				

CUTANEOUS NERVES

	Rt E	Rt T	Lt E	Lt T
G.A.N.				
R.C.N.				
U.C.N.				
S.P.N.				
S.N.				

Any changes within the last 6 months Yes / No

Date :

TRUNK NERVES

	Rt E	Rt T	Lt E	Lt T
U.N.				
M.N				
R.N.				
L.P.N				
P.T.N				

CUTANEOUS NERVES

	Rt E	Rt T	Lt E	Lt T
G.A.N.				
R.C.N.				
U.C.N.				
S.P.N.				
S.N.				

Any changes within the last 6 months Yes / No

KEY

✓ = Sensation Present
x = Sensation absent
M^ = Mobile Clawing
S^ = Stiff Clawing
x = Wound
CRACK = Crack
= Absorption or Shortening Level
E = Enlarged
T = Tender

Nerve Lesion	In years						
	6 months	1st	2nd	3rd	4th	5th	6th	7th
1. Thickening								
Tenderness								
Paralysis								
Steroid given								
2. Thickening								
Tenderness								
Paralysis								
Steroid given								
3. Eyes								
Normal								
Red								
Lagopthalmos								

Disability	Date	Date	Date	Date
Upper limbs				
Anaesthesia				
Ulnar Paralysis				
Median Paralysis				
Ulnar Median				
Radial Nerve				
Absorption				
Lower limbs				
Anaesthesia				
Claw toes				
Foot drop				
Absorption				
Trophic ulcer				
Foot wear				
Others				

I. INITIAL

1. Skin Lesion

Number _____ Sites _____

1. Hypopigmented ☐ : Erythematous ☐
2. Flat ☐ : Raised ☐
3. Annular ☐
4. Surface Dry ☐ : Scaly ☐ : Shiny ☐
5. Hair Loss : Yes/No
6. Anaesthesia : Pain ☐ Touch ☐ Temp ☐
7. Border: Ill-defined ☐ : Well defined ☐
8. Infiltration : Present/Absent If present sites _____

2. Nerve Lesion

Nerve	Thickened	Tender	Paresis	Paralysis	Anaesthesia
	R				
	L				
	R				
	L				
	R				
	L				

3. Eyes : Conjunctiva : Normal/Red
Cornea : Anaesthesia/Opacity
Iridocyclitis : Present/Absent
Lagophthalmos : Present/Absent

II. FOLLOW UP

	in years							
Skin Lesion	6 months	1st	2nd	3rd	4th	5th	6th	7th
Disappeared								
Inactive								
Regression								
Active								
Extension								
New lesions								
Infiltration (Present/Absent)								
Ear lobe (Normal/Infiltrated/ Wrinkle/Nodule)								

PULSE TREATMENT

	Date Started												
1st yr-Month	1	2	3	4	5	6	7	8	9	10	11	12	13
Treatment given date													
Reactions I, II, N, Nr													
Initials of MO/NMS													
2nd yr-Month													
Treatment given date													
Reactions I, II, N, Nr													
Initials of MO/NMS													
3rd Yr-Month													
Treatment given date													
Reactions I, II, N, Nr													
Initials of MO/NMS													

Reaction : I = Type I

II = Type II

N = Neuritis

Nr = No reaction

BACTERIALOGICAL EXAMINATION

Year	Date	Results

TREATMENT

1. Date of starting pulse _____ Change of dose if any with date _____

2. Drugs given: Rifampicin _____ mg
   Clofazimine _____ mg
   Clofazimine _____ mg
   Dapsone _____ mg

Reaction	Date	Date	Date
Neuritis			
Type I			
Type II			

Date of stopping treatment : _____

Regularity of treatment : Regular / Irregular

Date of discontinuing : _____

Reason for the same _____

_____

Relapse _____ Yes/No

Date _____

Type _____

ANNEXURE III

SURVEY REGISTER

S.No	H/HH No.	Name and Relation to HOH	Sex	Year of Birth	First Survey		Second Survey		Third Survey		Fourth Survey		Fifth Survey		Sixth Survey	
					Date	Finding	Date	Finding	Date	Finding	Date	Finding	Date	Finding	Date	Finding

Finding NE- : Not Examined
E - : No leprosy
E + : New Case
EC - : Old Case
ES - . : Suspect

* H/HH No: House/House hold no.

ANNEXURE IV

SUSPECT REGISTER

S.No	H/HH No.	Name and Address	Year of Birth	Sex	Date of Detection	Smear	Follow Up						Final Status Case/ Non Case
							1	2	3	4	5	6	

H No. : House No.
HH No. : House hold no.

ANNEXURE IV-A

KNOWN CASE REGISTER

Ward _____ **Sector** _____

Sl.No	S.R. No.	MDT No.	Name of the Patient	Gaurdian's Name	Year of Birth	Sex		Type		Source of Detec.				Immigrant	Date of		Smear result	
						M	F	MB	PB	S	C	V	OW		Detection	Registration	Date of Reg.	Date of Neg
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19

HAND		FOOT		EYE		FACE	Clinic Atttendance					Date & Mode of Deletion			Surveillance				Date of RFS	REMARKS
L	R	L	R	L	R		1994	95	96	97	98	PL	DIED	RFT	1	2	3	4	RFS	
20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

Use codes to fill the columns

Column No. 11: S - Survey; C - Contact; V - Voluntary; OW - Otherwise; General Survey (GS), Contact Survey (CS); School Survey (SS)

Column No. 20-25: L - Left; R - Right; PL - Permanently left; RFT - Release from treatment; RFS - Release from surveillance

Hand : Ulnar Palsy (UP); Median Palsy (MP), Ulnar Median Palsy (UMP); Anaesthesia (A); Cracks (CR); Mobile Claw (MC); Stiff Claw (SC); Absorption (Ab); Trophic Ulcer (TU)
Foot : Anaesthesia (A); Drop Foor (DP); Claw Toes (CT); Absorption(Ab); Trophic Ulcer (TU); Cracks (CR)
Eye : Lagophthalmos (LO); Loss of Eyebrows (LE); Partial Vision Loss (PVL); Complete Vision Loss (CVL); Ectropion (ECT); Corneal Anaesthesia (CA); Leucoma (LEU); Cataract (CAT)
Face : Nose Depression (ND); Facial Palcy (FP)

DAILY DIARY OF PMW / LI / NMA

ANNEXURE V

Sub Centre

1	2	3	4					5					6						7	OLD REGISTERED CASES											Suspects to be confirmed during screening	
DATE	VILLAGE	TOTAL NO OF HOUSES VISITED	POPULATION ENUMERATED					POPULATION EXAMINED					NEW CASES DETECTED						ACTIVE						INACTIVE						Adults	Children
													Adults			Children upto 15 yrs			Adults			Children			Adults			Children				
			M	F	MC	FC	Total	M	F	MC	FC	Total	MB	PB	Total	MB	PB	Total	MB	PB	Total	MB	PB	Total	MB	PB	Total	MB	PB	Total		

DAILY DIARY OF NMS

ANNEXURE V-A

1	2	3			4			5			6			7				8	REGISTERED FOR MDT										
DATE	VILLAGE	Total Cases to be screened			Cases screened			Cases unscreened			No. of new cases added during screening			Deletions				Adult						Children					
														Unfit for MDT	Migra-tion	Died	Others	M			F			MC			FC		
		MB	PB	Total	MB	PB	Total	MB	PB	Total	MB	PB	Total					MB	PB	Total	MB	PB	Total	MB	PB	Total	MB	PB	Total

ANNEXURE VI

RFT REGISTER

S. No.	H/HH No.	MDT No.	Name	Year of Birth	Sex	Type	MDRT		Date of DFT	Follow up				
							PB	MB		1	2	3	4	5

COMMUNITY HEALTH CELL
LIBRARY
and
Information
Centre
BANGALORE

51 DR-300
12568 M74

H No. : House No.
HH No. : House hold no.

SKIN SMEAR EXAMINATION
THE "SLIT AND SCRAPE" METHOD

TECHNIQUE

1. Thoroughly clean the selected site with spirit or ether to remove dirt and any saprophytes.

2. Hold the skin pinched up and raised between the thumb and index finger of the left hand. This will squeeze out blood from the part and minimise bleeding when cut is made. If due to thickness of the skin it is difficult to pinch up the skin, exert lateral compression with the two fingers stretching the bit of skin in between them.

3. With the point of a sterile scalpel make an incision of 5 mm long and 2 mm deep, scrape the bottom and the sides of the slit to obtain sufficient material for a smear.

4. Transfer the material from the point of a scalpel to clean new glass slide of 1" x 3" and make a uniform and moderately thin smear by spreading the material over a small area of 1 cm in diameter.

5. Press the outer surface of the skin with a piece of cotton wool to stop bleeding and seal the part with tincture benzoin.

6. When the smears are dry, fix it by passing the slide twice or thrice over a flame with surface carrying the smear upper most. Care should be taken to avoid too much heat which will result in cracking or charring the smear. Too little heat may not fix the smear efficiently and it may be washed out during staining and subsequent washing.

7. A minimum of 3 sites should be chosen

TECHNIQUE FOR STAINING SMEARS BY ZIEHL NEELSEN ACID FAST METHOD

The reagents required : (Modified)

1. The Stain

Basic Fuchsin	1 gm.
Absolute Alcohol	10 cc.
5% Phenol solution	90 cc.

2. Decolourising fluid

Hydrochloric acid (conc)	3 cc.
70% Alcohol	97 cc.

3. Counterstain

Methylene Blue	1 gm
Distilled Water	100 ml.

PROCEDURE :

1. Place the slides with fixed smears on a pair of glass rods kept over a sink or a trough.

2. Pour over the smears requisite quantity of carbol fuchsin through a small funnel fitted with a filter paper. Allow the stain to be in contact with the smears for 20 minutes. If quick staining is desires, heat the stain in a test tube to steaming and pour the heated stain on the smears and leave it there for 5 to 10 minutes.

3. Wash in running tap water.

4. Decolorise with acid-alcohol (10%) for 5 minutes and wash in running tap water.

5. Counterstain with Methylene blue solution for half to one minute.

6. Wash once again in running tap watter and let the smear dry in air.

7. Examine under microscope using oil-immersion objective.

The lepra bacilli will be seen as red rods (uniformly stained solid bacilli or fragmented rods.) The bacilli may be seen in singles, small groups or closely packed bunches called globi. Scattered among the bacilli, irregular blue stained structures are seen. They are the cells of various structures in dermis.

In addition to being able to state whether a given smear is positive or negative, it is also useful to be able to make as quantitative assessment of a bacterial content in the smears. This assessment is spoken of as "Bacterial Index". The assessment of quanity of bacilli in this manner at periodic intervals is a very useful guide in enabling one to assess the effect of therapy.

For the purpose of such assessment, it is necessary to examine multiple smears. In lepromatous leprosy cases, smears are obtained from several sites of the body and in any case from not less than 3 sites and each of the smears is given a quantitative value. The average of all the smears is the "Bacterial Index."

Examining the smear under the 1/12 (2mm). oil-immersion objective :-

1+ = 1-10 bacilli on average in 100 microscopic field.
2+ = 1-10 bacilli on average in 10 microscopic field.
3+ = 1-10 bacilli on an average 1 microscopic field.
4+ = 10-100 bacilli in average microscopic field.
5+ = 100-1000 bacilli in average microscopic field.
6+ = many clumps of bacilli in an average microscopic field (more than 1000)

BACTERIAL INDEX: When 3 to 6 smears are examined the average of the values for all the smears is termed as the "Bacterial Index"

For example, suppose that 3 smears are taken

1. R. Ear : 4+
2. L. Fore arm : 2+
3. Rt. Buttock : 2+

BI (Bacterial Index) is obtained by dividing 8 by 3 = 2.67

ANNEXURE VIII

DISABILITY REGISTER

S. No.	P.T. No.	Name	Year of Birth	Sex				Type		At Detection						During Treatment						During Surveillance					
				Adult		Child				Hand		Foot		Eye		Hand		Foot		Eye		Hand		Foot		Eye	
				M	F	M	F	MB	PB	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L

1 : Anaesthesia 2P : Paralysis 2U : Ulcer 2A : Absorption

The number indicate the disability grade

ANNEXURE IX

QUARTERLY PROFORMA FOR UTILISATION OF RIFAMPICIN & LAMPRENE

NAME OF THE PROJECT :
Address

QUARTER I/II/III/IV
(Strike out which is not applicable year)

		M.B.	P.B	Tuberculosis (IB)
A.: No. of cases who are on Multi Drug Therapy at the end of the previous quarter				
B. No. of cases added during this quarter under Multi Drug Therapy	Voluntary			
	Survey: Mass Survey			
	Healthy Contact Survey			
	Group Survey			
	Others: 1. Relapse			
	2. P.L.R			
	3. Referral			
C. No.of cases deleted during this quarter	a) R.F.T.			
	b) Others (P.L; Died; Wrong Diagnosis; Referral etc.)			
D. No. of cases remaining at the end of this quarter under Multi Drug Therapy (A + B) - C				

	RIFAMPICIN		LAMPRENE		DDS	
	300 mgs	150 mgs	100 mgs	150 mgs	50 mgs	25 mgs
E. Stock at the beginning of month/quarter/year						
F. Drug received from DF						
G. Drugs received from others sources						
H. Drugs issued during this month/quarter/year						
I. Balance at the end of the month/quarter/year						

Seal

Signature of the Medical Officer

NB: To be sent at the beginning of every quarter to the Damien Foundation Office, Madras.

ANNEXURE X

BACTERIOLOGICAL EXAMINATION REGISTER

S. No.	P.T. No.	Slide No.	Name	Age	Sex	Type	Date of Receipt	Date of Exam.	Result	
									1	2

ANNEXURE XI

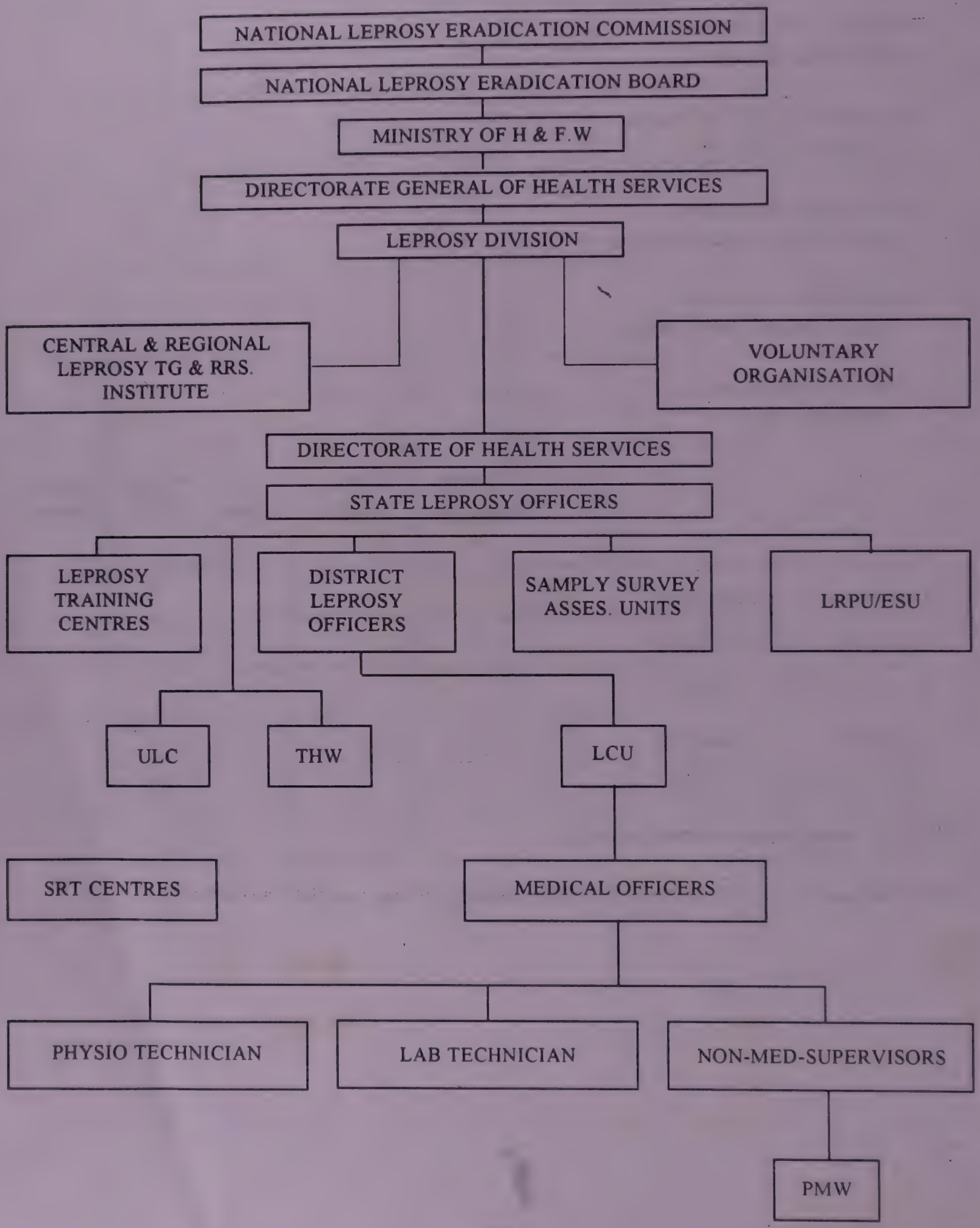
QUARTERLY REPORTING FORM ON DISABILITY

NAME OF STATE/UT REPORTING MONTH	DIST	LCU
1) Total no of high risk Patients at the end of last qtr		
2) No of high risk patients added during this qtr under report		
3) No of high risk Patients deleted (Mig & Died & RFS)		
4) No remaining at the end of reporting quarter		

	Plantar Anaesthe-sia	Claw Hand	Foot Drop	Plantar Ulcer	Lagoph-thalmos
5) No from 1 with disability					
6) No from 2 with disability					
7) No from 3 with disability					
8) No from 4 with disability					
9) No of Patients provided foot wear					
10) No undergone reconstructive surgery					

* High risk patients are to be considered for monitoring till they complete surveillance.

ORGANISATIONAL CHART OF NLEP



PROJECTION OF CENSUS POPULATION

FOR ANNUAL

$Pt = Po + ba$

where

Pt = Population at time t

Po = Population a time o

b = Absolute increase per unit time

a = Time interval (t-o)

For example-Population by January 1, 1971 was 2,06,45,600, population by January 1, 1981 was 2,58,11,500. Using the above formula, estimated population for July 1, 1990 is

$$b = \frac{P1981 - P1971}{1982 - 1971} = \frac{(2,58,11,500 - 2,06,45,600)}{10} = 5,16,590$$

$$P1990 = P1981 + b(1990 - 1981) = 2,58,11,500 + (5,16,590 * 9) = 3,04,60,810$$

FOR MIDYEAR

Estimated total population for the year
- this figure may be determined by arithmetic method: $Pt = Po + ba$

where

Pt = Population at time t

Po = Population at time o

b = increase per unit time

a = Time interval (t-o)

For example - Population by January 1, 1971 was 2,06,45,600, population by January 1, 1981 was 2,58,11,500. Using the above formula, estimated population for July 1, 1990 is

$$b = \frac{P1981 - P1971}{1981 - 1971} = \frac{(2,58,11,500 - 2,06,45,600)}{20}$$

= 2,58,295 (i.e., 6 month growth in population)

$$P1990\text{- July} = P1981 = b((1990 - 1981) \times 2) + 1)$$

$$= 2,58,11,500 = (2.58.295 \times 19) = 3.,07;19,105$$

ANNEXURE XIV

DISABILITY FORM

SL. NO.	ITEM		DIS-ABILITY GRADE	AMONG CASES UNDER TREATMENT						AMONG NEW CASES DETECTED						AMONG RFT CASES					
				EYE		HAND		FOOT		EYE		HAND		FOOT		EYE		HAND		FOOT	
				L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R
01	Total Number of Disability cases at the end of previous month/quarter/year		01																		
			02																		
02	New Disability developed during the month/quarter year under report		01																		
			02																		
03	Total no. of patients recovered or completely during the month/ quarter/year		01																		
			02																		
04	Deletions	PL	01																		
			02																		
		DIED	01																		
			02																		
05	Total Disability cases at the end of reporting month/quarter/year (1+2) - (3+4) = 5		01																		
			02																		

L - LEFT ; R - RIGHT

ANNEXURE XV

QUARTER I, II, III, IV [ANNUAL]

SL. NO.	Organ Affec-ted	DISABILITY	AMONG U.T. CASES				AMONG NEWLY DETECTED CASE				AMONG RFT CASES				RECOVERED CASES (Partially/Completely)			
			Left		Right		Left		Right		Left		Right		Left		Right	
			MB	PB	MB	PB	MB	PB	MB	PB	MB	PB	MB	PB	MB	PB	MB.	PB
01	EYES	Corneal Anesthesia Corneal Ulcer Iritis & Irodocycliltis Lagophthalmos Dacryocystitis Ectropion Blindness																
02	HANDS	Ulnar Neuritis Median Neuritis Radial Neuritis Claw hand-mobile Claw hand-stiff Fissures & Ulcers Absorption of Finger																
03	FEET	Lat. Pop. Nerve Neuritis Post. Tibial Neuritis Foot Drop Claw Toes Fissures & Ulcers Absorption of Toes																

ABBREVIATION

AFB	-	Acid Fast bacilli
Asym	-	Asymmetrical
BB	-	Boderline Boderline
BL	-	Boderline Lepromatous
BT	-	Boderline Tuberculoid
C.S.	-	Contact Survey
CLO	-	Clofozimine
D.D.S.	-	Diamino Diphenyl Sulphone
DDP	-	Drug Delivery Point
ENL	-	Erythema Nodosum Leprosum
G.P.	-	General Prtactioner
G.S.	-	General Survey
H.E.	-	Health Educator
HB	-	Haemoglobin
I.P.	-	Inter Phalangeal Joint
ICDS	-	Integrated Child Development Scheme
ILEP	-	International Federation of Anti-Leprosy Association.
Ind	-	Indeterminate
LL	-	Lepromatous (Polar)
M.O.	-	Medical Officer
M.P.	-	Metacarpo Phalangeal Joint
MDT	-	Multi Drug Therapy
NCDR	-	New Case Detection Rate
NMS	-	Non Medical Supervisor
O.D.	-	Once a day
P.T.	-	Physiotherapy Technician
PCD	-	Pre Clinic Drive
PHC	-	Primary Health Centre
PN	-	Poly Neuritic (more than one trunk nerve involved)
pn	-	Single nerve Trunk
RIF	-	Rifampicine
S.S.	-	School Survey
Sym	-	Symmetrical
TB	-	Tuberculosis
TT	-	Tuberculoid - (Polar type)
VMT	-	Voluntary Muscle Testing
Vol.	-	Voluntary

GLOSSARY

ABDUCTION	:	movement which is away from the midline.
ADENITIS	:	inflammation of the glands. Lymphadenitis : inflammation of the lymph glands.
ANAESTHESIA	:	loss of sensation
ARTHRITIS	:	inflammation of the joints.
BELL'S PALSY	:	a facial palsy of sudden onset, usually precipitated by cold.
CATARACT	:	opacity of the lens in the eyes.
CIRCUMCORNEAL CONGESTION	:	congestion of blood vessels around the cornea.
CLAWING	:	A finger with hyperextension of the metacarpophalangeal joint and flexion of interphalangeal joint.
CUTANEOUS	:	anything related to skin (cutis-skin)
DEFORMITY	:	abnormal appearance, disfigurement.
DE NOVO	:	there is no other pre-existing lesion; arising de novo means arising from the normal skin.
DEPIGMENTED	:	absolute loss of pigment.
DISABILITY	:	abnormal function.
DORSIFLEXION	:	flexion to the dorsal side.
ECTROPION	:	eversion of the lower eyelid.
ENDEMICITY	:	an area where a particular disease is prevalent for a long period.
ENL	:	(Erythema Nodosum Leprosum), erythematous, tender, subcutaneous nodules seen in type II reaction in leprosy.
EPISCLERITIS	:	inflammation of superficial part of the sclera.
EPISTAXIS	:	bleeding from the nose.
EXUDATE	:	fluid collected at the site of inflammation.
FIBULAR HEAD	:	upper part of the fibula bone, at the lateral side of the leg, just below the knee.
FILAMENT	:	nylon thread used to test for sensation.
GLAUCOMA	:	increased intraocular tension.
G6PD	:	Glucose-6-Phosphate Dehydrogenase, an enzyme useful in different metabolism.
GYNAECOMASTIA	:	enlarged male breast.
GYNAECOTHELIA	:	thick and enlarged nipple seen in male lepromatous patient.
HAEMOLYTIC ANAEMILA	:	anaemia produced by destruction of red blood cells.
HYPERPIGMENTED	:	the colour of the lesion is deeper or darker than the normal skin.

HYPOPIGMENTED	:	the colour of the lesion is less than the normal skin (no complete loss of pigment).
HYPOTHENAR	:	group of muscles on the ulnar side of the palm.
IP JOINT	:	interphalangeal joint, joint between two phalanges (bones of the finger)
LAGOPHTHALMOS	:	inability to close the eye.
LYMPHANGIOMA	:	benign proliferation of lymph vessels.
MEDIAL MALLEOLUS	:	medial lower end of the tibia.
MP JOINT	:	metacarpophalangeal joint, joints between the metacarpal bones and phalanges of the fingers.
NEPHRITIS	:	inflammation of the kidney.
OEDEMA	:	fluid collection in the tissues.
OPAQUE	:	Opposite of transparent, cannot be seen through; impervious to light.
OPPOSITION	:	movement of the thumb upwards and inwards, towards the tip of the 5th finger.
PASSIVE	:	not produced by active efforts.
PINCH	:	to press together firmly of a limited area between the fingers (often between thumb and index finger.)
PIP JOINT	:	proximal interphalangeal joint (joint next to MP joint in the finger).
PHOTOPHOBIA	:	difficulty to face the light directly.
PUNCTATE	:	resembling points or dots.
RENAL	:	anything related to the kidney.
SEQUELAE	:	consequences.
STREAMING MARGIN	:	a margin which gradually diffusely spreads to the normal skin.
SINUS	:	tract with one end open.
TOXIC	:	an uncomfortable state with high fever and pain.